TECHNICAL MEMORANDUM 1 MONITORING WELL INSTALLATION AND DEVELOPMENT AND SOIL SAMPLING

SUMMARY
SITE INVESTIGATION AND REMEDIATION REPORT
AIRPORT/KLONDIKE AREA
AT
PRATT & WHITNEY
EAST HARTFORD, CONNECTICUT
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ATTACHMENTS

Attachment A Monitoring Well Construction Logs

Acronyms

AEL Averill Environmental Laboratory, Inc.

DEP State of Connecticut Department of Environmental Protection

DPH State of Connecticut Department of Public Health

FID Flame-Ionization Detector H&A Haley & Aldrich, Inc.

LEA Loureiro Engineering Associates, Inc.

M&E Metcalf & Eddy, Inc.

NTU Nephelometric Turbidity Unit

P&W Pratt & Whitney

PETG Polyethylene Teraphthalate Copolyester

PID Photo-Ionization Detector
PPE Personal Protective Equipment

PVC Polyvinyl Chloride

QA/QC Quality Assurance/Quality Control
QUANT Quanterra Environmental Services, Inc.
RCSA Regulations of Connecticut State Agencies

SOP Standard Operating Procedure

TM Technical Memoranda

USTM Unit-Specific Technical Memorandum

VOC Volatile Organic Compound

1. INTRODUCTION

1.1 Purpose and Objective

This Technical Memorandum (TM) presents the methodology and results of the monitoring well installation and development and the soil sampling methodology used in the Airport/Klondike Area of the Pratt & Whitney (P&W) facility located at 400 Main Street (Main Street facility) in the Town of East Hartford, Connecticut. Monitoring wells were installed and developed by Loureiro Engineering Associates, Inc. (LEA) as part of the Site investigation activities to augment the existing monitoring well network. The new monitoring well locations were chosen to provide additional information on subsurface hydrogeologic conditions.

Additionally, this TM describes the methodology used for the installation of Geoprobe[®] screenpoint groundwater samples. Screenpoint samples were used in place of permanent or temporary monitoring wells to provide a "snapshot" of the groundwater quality.

Obtaining additional information on the subsurface hydrogeologic conditions included the following objectives:

- Explore the lithology and hydraulic characteristics of the overburden materials across the Site.
- Better define the groundwater levels to establish both the horizontal gradients and groundwater flow directions and the degree of groundwater/surface water interaction.
- Better define areas of contaminated groundwater.

1.2 Background

The Airport/Klondike Area is located on the eastern portion of the P&W Main Street facility on the east side of the main plant, north of Brewer Street and south of Silver Lane. The Airport/Klondike Area consists of four study areas that include the North and South Airport Areas and the North and South Klondike Areas. Previous investigations at the Site performed from 1990 through 1993 resulted in the installation and sampling of groundwater monitoring wells and temporary wellpoints throughout the Airport/Klondike Area.

In the North Airport Area, wells NA-MW-01 through NA-MW-04 were installed in October



1991 during the Site-Wide Environmental Monitoring Program at the Main Street facility by Haley & Aldrich, Inc. (H&A). In the North Airport Area, piezometers NA-PZ-01 through NA-PZ-12 were installed in November 1991 during the Site-Wide Environmental Monitoring Program.

In the North Klondike Area, wells NK-MW-01 through NK-MW-05 were installed in February 1990 during the Preliminary Reconnaissance Survey of the Airport/Klondike Area by Westinghouse Environmental and Geotechnical Services, Inc. (Westinghouse). Wells NK-MW-06 and NK-MW-07 were installed in October 1991 during the Site-Wide Environmental Monitoring Program. Wells NK-MW-08 through NK-MW-10 were installed in October 1992 during the Environmental Assessment of the Former PCB Storage Building by H&A. Wells NK-MW-12 through NK-MW-17 were installed in about April 1993 during the Klondike Area Site Investigation by Metcalf & Eddy, Inc. (M&E). Two additional monitoring wells, NK-MW-18 and NK-MW-19, were installed in July 1996 by LEA as part of the most recent investigation activities.

In the South Klondike Area, wells SK-MW-01 through SK-MW-08S and SK-MW-8D were installed in February 1990 during the Preliminary Reconnaissance Survey. Wells SK-MW-09 through SK-MW-13 were installed in October 1991 during the Site-Wide Environmental Monitoring Program. Wells SK-MW-14I, SK-MW-15I, and SK-MW-16 were installed in about April 1993 during the Klondike Area Site Investigation. Six additional monitoring wells, SK-MW-18 through SK-MW-24, were installed in August 1996 by LEA as part of the most recent investigation activities.

In the South Airport Area, monitoring wells SA-MW-01 and SA-MW-02I were installed in February 1990 during the Preliminary Reconnaissance Survey. Wells SA-MW-03 through SA-MW-05S and SA-MW-05I were installed in October 1991 during the Site-Wide Environmental Monitoring Program. In the South Airport Area, piezometers SA-PZ-01 and SA-PZ-02 were installed in November 1991 during the Site-Wide Environmental Monitoring Program.

1.3 Scope

This TM covers the methodologies and rationale used for the installation of monitoring wells, Geoprobe® prepack monitoring wells, piezometers, and stream gauges at the Site during the period from 1993 to the present. This TM also covers the methods employed to sample soil during monitoring well installation. However, this TM does not cover soil sampling methodologies not associated with monitoring well installation but conducted during the



installation of soil borings as part of the contaminant delineation activities at the Site. In addition, this TM also does not cover specific chemical analyses of soil samples collected during the monitoring well installation as these data are discussed in the appropriate Unit-Specific Technical Memorandum (USTM), or the chemical analyses of groundwater samples collected from these monitoring wells as these are discussed in TM 3, *Groundwater Quality and Sampling*.

1.4 General Geologic and Hydrogeologic Conditions

The geologic and hydrogeologic characteristics of the Site are discussed in detail in the main body of this report. In general, the surficial materials, in which the majority of the monitoring wells are screened, consist of medium to fine grained sands with trace levels of fine gravels and coarse sands. These sediments are generally post-glacial, fluvial deposits associated with the Connecticut River, although in many places the upper portion of these sediments has been anthropogenically disturbed during on-site construction activities. Beneath the fluvial sediments are glaciolacustrine sediments, primarily laminated silts and clays, associated with glacial Lake Hitchcock. The basal sediment layer over most of the area is glacial till and stratified drift. Bedrock in the general East Hartford area consists of Triassic Age, interbedded arkoses and basalts. Bedrock in the area has a general slight dip eastward cut by widespread steep faults.

The regional drainage basin is the Upper Connecticut River Basin. Regional flow in the unconsolidated materials of this part of the basin is to the west, towards the Connecticut River. Local groundwater flow is also controlled to some extent by local drainage sub-basins and topography. The upper portion of the unconsolidated sediments serves as the primary aquifer in the area. Groundwater flow in the bedrock is primarily within fractures and fault planes, and to a lesser extent within the rock matrix. The local bedrock aquifer would be adequate as a residential water supply source, but groundwater yields are typically too low to be of commercial or industrial use.

1.5 Well Locations and Rationale

Monitoring wells have been installed at the Site over the course of several years as parts of a variety of environmental investigations. Monitoring wells and piezometers have been installed to provide overall groundwater flow patterns, overall groundwater quality, water-table elevation data for Rentschler Airport drainage, and area-specific groundwater quality information. In general, monitoring wells and piezometers installed by LEA have been designed to address specific groundwater quality issues in areas of known or suspected groundwater contamination, or to provide additional background groundwater quality and water-table elevation data.

In many cases, these monitoring wells were located on the basis of historical information regarding Site operations, or on the basis of field observations made during numerous Site walkovers and visits. Information on historical operations has been obtained from various reports, aerial photographs, engineering drawings and plans, and P&W internal memoranda. More detail on historical operations is included in the main body of this report as well as in the USTMs.

Based on information collected from existing monitoring wells, monitoring wells and piezometers installed during this Site investigation have been screened in the upper portion of the unconsolidated aquifer. Monitoring wells and piezometers have been installed to address specific potential contaminant release issues and to supplement the existing monitoring well network. In some cases, the location of a monitoring well has been chosen on the basis of groundwater quality information collected from Geoprobe[®] screenpoint groundwater samples. In other cases, monitoring wells have been located on the basis of soil quality data derived from the soil boring program. A summary for the location rationale for the monitoring wells and piezometers is presented in Table 1.

2. METHODOLOGY

This section presents the methods and techniques used to install the monitoring wells and piezometers at the Site. These methods were used by LEA, although some of the general procedures and methods were also used by previous consultants and contractors who installed the existing monitoring wells.

2.1 General Procedures

Monitoring wells in the Airport/Klondike Area have been installed by conventional hollow-stem auger drilling rigs and by direct-push techniques using the LEA Geoprobe® drilling rig. Monitoring wells have been installed at the Site since approximately 1980. This TM discusses the installation methods and soil sampling procedures used to install the monitoring wells emplaced at the Site since approximately 1990. Where possible, reference is made to techniques and methodologies used to install existing monitoring wells by previous consultants and contractors. However, this information has been taken from available literature and does not constitute first-hand knowledge of the installation procedures or sampling methodologies. In addition, some information regarding monitoring well construction and/or soil sampling was not reported.

Wells installed during the most recent investigation activities were installed in general accordance with the procedures described in the LEA Standard Operating Procedure (SOP) Standard Operating Procedure for Hollow Stem Auger Borings and the LEA SOP for Standard Operating Procedure for Monitoring Well Installation.

2.2 Drilling Methods

Two drilling methods were used to install monitoring wells, both historical monitoring wells and those installed as part of the most recent investigation activities, in the Airport/Klondike Area. The methods used were hollow-stem augering and Geoprobe® direct-push techniques. Each of these methods is briefly described below.

The hollow-stem auger drilling method used continuous-flight hollow stem augers for monitoring well installation. The typical auger used had an inside diameter of 4.25 inches and a length of 5 feet. A pilot assembly, consisting of a surface-retractable plug for the lead-auger head, was used to avoid filling the augers with formation material. Continuous sampling with a split-spoon sampler was performed in advance of the augers. The split-spoon sampler consisted

of a 24-inch long by 1.375-inch inside diameter steel sampling tube. The split-spoon sampler was driven through the 2-foot sampling interval with a 140-pound hammer with a 30-inch drop. After the split-spoon sampler was retrieved, the sampler was transferred to the attending geologist for sampling and logging. Drilling fluids were not required during the installation of soil borings using hollow-stem augers.

The direct-push techniques with the LEA Geoprobe 5400 were used to install soil borings and both temporary and permanent monitoring wells. Direct-push techniques involved the initial installation of a soil boring to depth using Geoprobe soil sampling techniques. Boreholes were advanced using the Geoprobe Macro-Core soil sampling equipment. Upon completion of the soil boring, an installation casing, sealed at the tip with an expendable stainless-steel point, was advanced to depth. The expendable stainless-steel point was used to avoid filling the casing with formation material.

The Macro-Core® system consisted of a 48-inch long by 2-inch outside diameter steel sampling tube outfitted with disposable 46-inch long by 1.75-inch diameter polyethylene teraphthalate copolyester (PETG) liners. The soil sampler was outfitted with a new liner and a fitted piston tip, and the entire unit was driven to the top of the sampling interval with the Geoprobe® rig. The purpose of the fitted piston tip was to seal the end of the sampling tube against the introduction of formation material during advancement. The piston tip was released by the operator, the sampler was driven to the final sampling depth by a combination of percussive hammering and direct pressure, and the sampler was retrieved. After the sampler was retrieved, the soil-filled liner was removed from the sampler and transferred to the attending geologist for sampling and logging.

2.3 Soil Sampling Methods

Soil samples collected from soil borings were sampled in general accordance with the procedures described in the LEA SOP Standard Operating Procedure for Soil Sampling. Continuous soil sampling was performed during the advancement of all boreholes. Soil sampling procedures were similar for split-spoon samples and for Geoprobe® Macro-Core® samples

Immediately after collection, all soil samples were examined by the attending geologist for indications of contamination, such as the presence of visible free-phase petroleum, visible staining, or the incidental presence of odors. Soil samples were collected directly into laboratory supplied glass sample containers with Teflon[®]-lined lids for submission to an off-site laboratory for possible analysis. In addition, a 5-gram aliquot of the soil was collected directly into a 40-



milliliter vial with a Teflon[®] septum for submittal to the LEA Analytical Laboratory for analysis for target VOCs. After sample collection, all soil samples were field headspace screened with either a photoionization detector (PID) or flame ionization detector (FID) for the presence of volatile organic compounds (VOCs).

2.4 Borehole Logging

After the retrieved soil was sampled for possible analysis at an off-site laboratory and field headspace screening, the attending geologist also described the soils using a modified Burmister Classification System. The geologic descriptions were recorded on standardized "Geologic Boring Log" forms in accordance with the LEA SOP Standard Operating Procedure for Geologic Logging of Unconsolidated Sedimentary Materials. The general data recorded for the subsurface materials encountered included the estimated grain size ranges according to the Burmister Classification Scheme, color, relative degree of water saturation, and visible sedimentary structures.

2.5 Installation of Monitoring Wells

Following completion of each borehole to the desired depth, monitoring wells were installed in general accordance with the LEA SOP *Standard Operating Procedure for Monitoring Well Installation*. The screened interval for the monitoring well was specified by the geologist based on the observed depth to water, the materials encountered, and the presumed water-table fluctuations to be expected.

During monitoring well installations, additional information regarding the monitoring well construction details was recorded on standardized "Monitoring Well Construction" log forms in accordance with the LEA SOP Standard Operating Procedure for Monitoring Well Installation. The general information recorded included the types and construction of the well materials, the screened interval, the dimensions and materials of the filter pack, the backfill materials, and the surface completion of the monitoring well.

2.5.1 Installation of Standard Monitoring Wells

For monitoring wells installed with conventional hollow-stem auger drill rigs, 2-inch diameter polyvinyl chloride (PVC) well materials were selected based on the need to allow groundwater sampling and minimize the volume of waste soil and purge water generated.

The 2-inch PVC well material was installed in the borehole to the specified depth interval. All PVC well materials were pre-cleaned by the manufacturer and kept in the sealed packaging prior to installation in the borehole. From bottom to top, the well materials consisted of a 2-inch diameter PVC end cap, a 5- or 10-foot length of 0.010-inch (No. 10 slot) mill-slotted PVC screen, and an appropriate length of 2-inch diameter PVC blank casing (riser). The well materials were joined by factory-threaded ends. Total well screen lengths were kept to 10 feet or less to allow sampling of discrete intervals while allowing a sufficient length of open screen for water-table fluctuations.

After the well materials were in place, a filter sand pack was installed from the bottom of the screened interval to a depth of at least 6 inches above the screened interval. The shallow thickness of filter pack above the screened interval was necessary in some cases due to the shallow depth to water and the need to provide a sufficient length of screen above the existing water table to allow for natural water-table fluctuations throughout the year while also leaving space for completion of the necessary components for well construction. The filter pack material was typically chosen based on previous field experience at the Site. The filter pack material typically consisted of Morie No. 00, No. 0, or No.1 sand, or the equivalent.

Above the filter pack, a bentonite chip or pellet seal was placed to prevent surface contamination from entering the well screen. The thickness of the annular seal ranged from approximately 6 inches to 2 feet depending on the available annular space. The bentonite seal was hydrated with potable or distilled water when placed above the water table. Typically, the annular seal was made sufficiently thick so that the top of the annular seal was coincident with the base of the concrete pad.

Monitoring wells were completed with either above-grade or at-grade wellhead completions, depending upon the anticipated level of traffic in the vicinity of the well. The concrete pads on all monitoring wells were originally intended to be 3 foot by 3 foot by 3 foot. However, due to the shallow depth to groundwater in some areas of the Site, some concrete pads were as thin as 2 feet. Above-grade wellhead completions consisted of protective steel casings with locking caps. The protective casings were approximately 5 feet long with the base of the protector placed approximately at the bottom of the concrete pads. The top of the protective casing was approximately 0.2 to 0.4 feet above the top of the PVC riser. At-grade wellhead completions consisted of a steel protective roadbox and a locking plug for the monitoring well PVC riser. The concrete pads were constructed so as to slope away from the monitoring well to allow precipitation to drain away from the protector and not pond at the well. A survey reference point was installed at all monitoring well locations installed by conventional drilling rigs.

2.5.2 Installation of Geoprobe® Prepack Monitoring Wells

Direct-push techniques with the LEA Geoprobe[®] 5400 were used to install both temporary and permanent monitoring wells. Direct-push techniques for permanent monitoring well installations involved the initial installation of a soil boring to depth using Geoprobe[®] soil sampling techniques. Boreholes were advanced using the Geoprobe[®] Macro-Core[®] soil sampling equipment. Upon completion of the soil boring, an installation casing, sealed at the tip with an expendable stainless-steel point, was advanced to depth. The expendable stainless-steel drive point was used to avoid filling the casing with formation material.

The installation casing was a 2.125-inch outside diameter threaded steel casing with an expendable drive point at the downhole end. The expendable drive point was held in-place during casing advancement by an O-ring. The O-ring also maintained the watertight integrity of the casing during advancement to depth. The monitoring well was installed within the installation casing.

The base of the screened section of the Geoprobe[®] monitoring well was fitted with a coupling which attached to the expendable drive point and anchored the screen and riser into place. The prepack screened sections were composed of interlocking, 3-foot long, 0.5-inch diameter, 0.010-inch slotted Schedule 80 PVC surrounded by a 1.5-inch diameter stainless steel mesh which held the filter pack sand in place. The filter pack consisted of a 20/40 grade silica sand.

The prepack screens were placed into the installation casing and an appropriate length of 0.5-inch diameter Schedule 80 PVC riser was attached. After lowering the well sections to the base of the casing, the well was attached to the expendable drive point by driving the well down sharply. After the well was attached to the drive point, the installation casing was withdrawn from the borehole while an approximately 2-foot thick sand cap was placed above the screen. The purpose of the sand cap was to isolate the screened interval from the bentonite seal and prevent bentonite from infiltrating into the screen. A bentonite seal was placed above the sand cap. This seal was typically brought to the surface in the Airport/Klondike Area due to the relatively shallow depth to the water-table. The monitoring wells were completed with either above-grade or at-grade wellhead completions similar to those described above for standard monitoring wells.

Temporary monitoring wells were used in instances where a groundwater sample was required and where a water-table elevation measurement may also have been desired. Temporary monitoring wells were not completed with roadboxes, filter packs, or bentonite seals, but were

typically constructed of 1-inch diameter Schedule 80 PVC screen and riser installed directly in the open borehole and sampled immediately.

In some instances, a small amount of filter pack sand was added to stabilize the borehole, but a bentonite seal was not typically used because of the possible difficulty in removing the temporary well. Temporary wells were not left in place for extended periods of time. These temporary wells were installed only for as long as necessary to collect a groundwater sample, to survey the elevation, or to collect water-table elevation data. Temporary monitoring wells were removed and the boreholes abandoned by filling with bentonite.

2.5.3 Installation of Screenpoint Samples

Screenpoint groundwater samples were collected using a Geoprobe Screen Point Sampler prior to approximately February 1997 and a Geoprobe SP-15 Screen-Point Sampler since approximately February 1997. Screenpoint sampling devices were typically employed in "unsampled" boreholes within 6 to 12 inches of "sampled" boreholes. In this manner, the groundwater samples collected from the screenpoint sampling devices represent undisturbed groundwater from the same interval as the corresponding soil samples from the immediately adjacent soil borings.

The Screen Point Sampler[®] consisted of a 22-inch long, stainless-steel wire mesh insert and sleeve that was driven to depth in a protective sheath with an expendable drive point. The wire mesh insert and sleeve were held in place in the protective sheath by the expendable drive point which in turn was held in place by inert O-ring seals and the pressure of being pushed through the formation. After the screen was driven to depth, the drill rods were retracted approximately 24 inches, and the expendable drive point remained in place, creating a void in the formation. The Screen Point Sampler[®] was manually extended into the void while the sheath and drill rods sealed the borehole above the sampler. After the sampler had been emplaced, a groundwater sample was collected using standard sampling techniques. Groundwater sampling methodologies and results are discussed in TM 3, Groundwater Quality and Sampling.

The SP-15 Screen Point Sampler consisted of an approximately 42-inch long, stainless steel, wire-wound screen and metal sheath provided with an expendable drive point. After the screen was driven to depth, the drill rods were retracted approximately 44 inches, and the expendable drive point remained in place, creating a void in the formation. The SP-15 screen was manually extended into the void while the sheath and drill rods sealed the borehole above the sampler. After the sampler has been emplaced, a groundwater sample was collected using standard



techniques. Groundwater sampling methodologies and results are discussed in TM 3, Groundwater Quality and Sampling.

After the collection of groundwater samples from either a Screen-Point Sampler[®] or an SP-15 Screen-Point Sampler[®], the screens, sheaths, and drill rods were removed, and the expendable drive points remained in place as the borehole was abandoned.

2.6 Historical Monitoring Wells

Monitoring wells have been installed at the Site since approximately 1990. These monitoring wells have included monitoring wells with shallow, intermediate, and deep screened intervals. Shallow monitoring wells were constructed such that the screened interval was placed across the water-table. Intermediate depth monitoring wells were constructed such that the screened interval was typically at the base of the upper aquifer, below the water table. In several cases, the monitoring wells indicated as intermediate were constructed with screened intervals immediately below the water table.

The first sixteen monitoring wells at the Site appear to have been installed in 1990 under the supervision of Westinghouse during the Preliminary Reconnaissance Survey of the Airport/Klondike Area. Fifteen shallow/intermediate depth overburden monitoring wells, NK-MW-01I, NK-MW-02I, NK-MW-03I, NK-MW-04I, NK-MW-05S, SA-MW-01I, SA-MW-02I, SK-MW-01I, SK-MW-02I, SK-MW-04I, SK-MW-05S, SK-MW-06I, SK-MW-07I, and, SK-MW-08S, installed during this survey were reported to have been installed using hollow-stem auger boring techniques. One deep monitoring well, SK-MW-08D, was installed using drive-and-wash techniques to avoid the possibility of cross-contaminating the deeper portion of the upper aquifer.

During the installation of these historical monitoring wells, split-spoon samples were collected every five feet and selectively screened for the presence of VOCs. Geologic boring logs including the available monitoring well construction details are presented in Attachment A. The monitoring well construction details are also summarized in Table 2.

In 1992, fifteen additional monitoring wells were installed in the Airport/Klondike Area under the supervision of H&A as part of a Site-Wide Environmental Monitoring Program. The fifteen shallow/intermediate depth overburden monitoring wells, NA-MW-01, NA-MW-02I, NA-MW-03, NA-MW-04I, NK-MW-06, NK-MW-07, SA-MW-03, SA-MW-04, SA-MW-05S, SA-MW-05I, SK-MW-09, SK-MW-10, SK-MW-11, SK-MW-12, and SK-MW-13, were advanced using





hollow-stem augers. Copies of all available geologic boring logs are included in Attachment A. Available construction details for these monitoring wells are summarized in Table 2.

In addition to the fifteen monitoring wells described above, fourteen piezometers were also installed. These piezometers, NA-PZ-01 through NA-PZ-12, SA-PZ-01, and SA-PZ-02, were installed in areas where groundwater quality monitoring was not anticipated to be required, but where groundwater elevation data could not otherwise be obtained. These piezometers were generally installed in the same manner as the monitoring wells, however, no soil sampling was performed during the installations. No geologic boring logs were recorded for these piezometers. Available construction details for these piezometers are summarized in Table 2.

2.7 Monitoring Well Development

Monitoring wells were developed in accordance with the procedures outlined in the LEA SOP Standard Operating Procedure for Monitoring Well Installation. Development waters were originally placed into portable containers until they were placed into 55-gallon drums as described in Section 2.11.

Monitoring wells were developed by alternately over-pumping, using a submersible pump to draw down the water level in the well, and surging to flush fine sediment from the aquifer through the screen to be subsequently removed. After the well was initially pumped, the well was then surged using a surge block or inertial pump. With the surge block or inertial pump, the well was surged beginning at the bottom of the screened interval and working upward to the top of the screen. After surging, the well was pumped to remove suspended sediments. This cycle was repeated until the well development criteria had been met.

Monitoring wells were developed until the following criteria were met:

- Removal of at least three well volumes.
- Stability of the physical parameters of temperature and specific conductance. Values for these parameters must be within ten percent over three sequential water samples with a minimum of one well volume extracted between samples.
- Turbidity must be less than approximately twenty Nephelometric turbidity units (NTU) at completion, and the water must be clear.
- The pH must be lower than 9.0 and stable within 0.1 pH unit.

2.8 Soil Physical Properties Testing

Soil physical properties testing was not typically performed on soil samples collected during monitoring well installations. Soil physical properties testing is often performed during monitoring well installations to provide information on the grain size distribution of the aquifer so that a suitable filter pack material may be selected. However, soil physical properties testing was performed in 1992 as part of the Site-Wide Environmental Monitoring Program performed by H&A, Inc. Matrix porosity testing and grain size analyses were performed on selected soil samples collected from across the site.

In general, the results of the grain size distribution analysis indicate that the upper aquifer materials at the Site are a brown to red brown, medium to fine sand, with traces of fine gravel and coarse sand. The results of the matrix porosity testing are also relatively uniform indicating typical matrix porosity values of between 36.6 and 43.3 percent for the upper aquifer sediments at the Airport/Klondike Area (H&A, 1993). A summary of the available soil physical property data is presented in Table 3.

2.9 Decontamination of Materials and Equipment

The purpose of consistent decontamination procedures was to prevent the potential spread of contamination between boreholes and samples and from the immediate work area around the well borehole. All equipment and materials placed into a borehole, or associated with the collection and sampling of soil from a borehole, was decontaminated prior to initiating the drilling activities and between individual samples, as appropriate. Decontamination procedures are presented in the LEA SOP Standard Operating Procedure for Hollow Stem Auger Soil Borings.

Drilling rigs and downhole equipment (e.g., hollow-stem augers, bits, etc.) were decontaminated by steam-cleaning prior to initiating any drilling activities at the Site. Steam-cleaning took place at a decontamination pad. The decontamination pad was typically a portable plastic or metal basin of sufficient volume to hold augers and other drilling equipment and which could be laid beneath the back end of the drilling rigs to contain the spent decontamination fluids.

Sampling equipment such as split-spoons and stainless steel spatulas were decontaminated between uses in the field at the drilling site or the decontamination pad. The sampling equipment was decontaminated using the following procedure:

• Brush off gross soil particles.



- Wash and scrub equipment with phosphate-free detergent.
- Rinse equipment with deionized water.
- Rinse equipment with dilute nitric acid solution.
- Rinse equipment in deionized water.
- Rinse equipment with dilute methanol/water solution.
- Rinse equipment in deionized water.
- Allow equipment to air dry.

The decontamination water was maintained in 5-gallon buckets during use and transferred to 55-gallon drums for disposal. LEA field personnel were responsible for preventing cross-contamination between soil samples collected for laboratory analysis. Sample preparation tables were covered with clean, disposable plastic. Clean, disposable plastic was also laid on the ground beneath the sample preparation tables and the decontamination solutions to catch dropped soil and spilt decontamination solutions.

2.10 Monitoring Well Location Identifiers

Monitoring wells, as well as piezometers, stream gauges, surface water and sediment sampling locations, and soil borings, have been provided with location identifiers using a systematic method to prevent duplication of location identifiers. The system of location identifiers provides a relatively easy means of finding the referenced locations on site maps. All parts of the P&W East Hartford facilities, including the Andrew Willgoos Gas Turbine Laboratory, the Colt Street facility, and Main Street facility, have been divided into twenty-nine study areas. Each of the study areas has been assigned two-letter identifiers based upon the common name for the area. These two-letter designations are presented in Table 4.

In addition, each type of sampling location has been assigned a two-letter designation to identify the major sample type for a given sampling location. The two-letter designations for the various types of sampling locations are also presented in Table 4.

Because of the large areas involved, the study areas that encompass the Airport/Klondike Area include the North and South Airport Areas and the North and South Klondike Areas. All monitoring and sampling locations have been given a location identifier based on their location in the Airport/Klondike Area, the type of sampling or monitoring location, and finally a sequential numeric identifier based upon the specific type of location. The monitoring well locations are shown on Drawing 1. All of the groundwater sampling locations, including





monitoring wells, piezometers, and Geoprobe® screenpoint samples, are presented on Drawings 2 through 5 which cover the entire Airport/Klondike Area.

2.11 Waste Management

All spent decontamination fluids generated during drilling activities and purge water generated during monitoring well development activities for the investigation were placed in 55-gallon closed-top drums supplied by P&W for subsequent off-site disposal by P&W. The drums were labeled, the wells contributing to each was listed, and the information tracked to aid in waste characterization and disposal.

All soil cuttings generated during drilling activities were placed in 55-gallon open-top drums supplied by P&W for subsequent off-site disposal by P&W. The drums were labeled, the wells contributing to each was listed, and the information tracked to aid in waste characterization and disposal.

2.12 Health and Safety

LEA field personnel conducted field activities in accordance with the LEA Site Health and Safety Plan that was prepared for all of the investigation activities included on the Site. In general, well installation was conducted in modified Level D personal protective equipment (PPE) consisting of safety glasses and surgical or nitrile gloves, steel-toed shoes, and hard hats. Drilling contractors employed as subcontractors operated in accordance with their specific health and safety plans.



3. RESULTS

A total of fifty-six monitoring wells and fourteen piezometers have been installed at the Site since approximately 1980. These monitoring wells and piezometers have been installed during various environmental investigations and for various purposes. In some cases, as a substitute for permanent monitoring wells or piezometers, Geoprobe[®] screenpoint groundwater samples were collected.

Monitoring wells and piezometers were installed in general accordance with the procedures and practices described in the LEA SOP *Standard Operating Procedure for Monitoring Well Installation*. Changes in specific conditions, such as the depth to the water table, necessitated modifications to certain monitoring well installations and designs.

In general, fine sand packs have been deemed unnecessary due to the grain-size of the filter pack and the typically shallow depth to water. In several monitoring wells the height of the filter pack was modified from the original design due to the shallow depth to water and the need to install a sufficient bentonite seal and accommodate the construction of an adequate concrete pad.

REFERENCES

Haley & Aldrich, Inc., January, 1993, Site-Wide Environmental Monitoring Report, Pratt & Whitney, East Hartford, Connecticut, prepared for Pratt & Whitney.

Metcalf & Eddy, Inc. July 1993, Draft Report - Klondike Area Site Investigation, UTC / Pratt & Whitney Facility, East Hartford, CT, prepared for Pratt & Whitney.

Westinghouse Environmental and Geotechnical Services, Inc. November 1990, Current Assessment Summary Report, Pratt & Whitney, East Hartford, Connecticut, unpublished report for Pratt & Whitney.

Westinghouse Environmental and Geotechnical Services, Inc. 1990, *Preliminary Reconnaissance Survey of the Klondike Area*, Pratt & Whitney, East Hartford, Connecticut, unpublished report for Pratt & Whitney.

TABLES



Table 1 Monitoring Well Locations and Rationale Airport/Klondike Area, Pratt & Whitney, East Hartford, Connecticut

Monitoring Well ID	Rationale/General Location
NA-MW-01	Areal coverage - North Airport
NA-MW-02	Areal coverage - North Airport
NA-MW-03	Areal coverage - North Airport
NA-MW-04	Areal coverage - North Airport
NA-MW-05	Former Pickle Company
NA-MW-06	Former Pickle Company
NA-MW-07	Former Pickle Company
NA-PZ-01	Water levels - North Airport
NA-PZ-02	Water levels - North Airport
NA-PZ-03	Water levels - North Airport
NA-PZ-04	Water levels - North Airport
NA-PZ-05	Water levels - North Airport
NA-PZ-06	Water levels - North Airport
NA-PZ-07	Water levels - North Airport
NA-PZ-08	Water levels - North Airport
NA-PZ-09	Water levels - North Airport
NA-PZ-10	Water levels - North Airport
NA-PZ-11	Water levels - North Airport
NA-PZ-12	Water levels - North Airport
NK-MW-01	Northeastern property corner
NK-MW-02	Suntan Area
NK-MW-03	Suntan Area
NK-MW-04	Suntan Area
NK-MW-05	Suntan Area
NK-MW-06	Soil storage area
NK-MW-07	Former tank farm
NK-MW-08	Former PCB Storage Building
NK-MW-09	Former PCB Storage Building
NK-MW-10	Former PCB Storage Building
NK-MW-11	Former PCB Storage Building
NK-MW-12	South of Suntan Area Access Road
NK-MW-13	X-314 Test Stand
NK-MW-14S	X-410 and X-412 Test Stands
NK-MW-15S	Western North Klondike areal coverage
NK-MW-16	X-430 through X-436 Test Stands Steel Tank Area
NK-MW-17	North Klondike Soil Piles
NK-MW-18	X-430 Test Stand

Table 1 Monitoring Well Locations and Rationale Airport/Klondike Area, Pratt & Whitney, East Hartford, Connecticut

Monitoring Well ID	Rationale/General Location				
NK-MW-19	X-401 Test Stand				
NK-PZ-01	Water levels - North Klondike				
NK-PZ-02	Water levels - North Klondike				
SA-MW-01	Fire Training Area				
SA-MW-02I	Contractor Storage Area				
SA-MW-03	Fire Training Area				
SA-MW-04	Contractor Storage Area & Former Soil Stockpile				
SA-MW-05I	Monitor base of aquifer at SA-WM-05S				
SA-MW-05S	Contractor Storage Area				
SA-PZ-01	Water levels - South Airport				
SA-PZ-02	Water levels - South Airport				
SK-MW-01	South Klondike Graoundwater Quality				
SK-MW-02	South Klondike Graoundwater Quality				
SK-MW-03	South Klondike Graoundwater Quality				
SK-MW-04	South Klondike Graoundwater Quality				
SK-MW-05	Virgin Product Storage Area				
SK-MW-06	Fire Training Area				
SK-MW-07	Chemical Storage Building in Linde Area				
SK-MW-08D	Base of aquifer at SK-MW-08S				
SK-MW-08S	North-South Airport Area				
SK-MW-09	Stratigraphy - Eastern property corner				
SK-MW-10	Stratigraphy - Eastern property corner				
SK-MW-11	Quonset Hut				
SK-MW-12	Fire Training Area				
SK-MW-13	Southeast property corner				
SK-MW-14I	Storage Yard 3				
SK-MW-15I	Former drum storage area south of Cryogenics Builidng				
SK-MW-16	Fire Training Area and Tie-Down Area				
SK-MW-19	Virgin Product Storage Area				
SK-MW-20	Virgin Product Storage Area				
SK-MW-21	Virgin Product Storage Area				
SK-MW-22	Virgin Product Storage Area				
SK-MW-23	Virgin Product Storage Area				
SK-MW-24	Virgin Product Storage Area				

Table 2 Monitoring Well Construction Data Summary Airport and Klondike Areas, Pratt & Whitney, East Hartford, Connecticut

Monitoring Well	Completion Date	Easting	Northing	Reference Elevation	Top of Casing Elevation	Depth to Top of Screen	Depth to Base of Screen	Depth to Top of Filter Pack	Depth to Base of Filter Pack	Depth to Top of Seal	Depth to Base of Seal	Total Depth of Boring
NA-MW-01	10/11/91	183865.1	150087.8	46.09	46.31	5.30	15.30	4.30	15.30	2.30	4.30	
NA-MW-02	10/11/91	183169.3	147923.8	43.13	43.35	4.80	14.80	3.80	14.80	1.80	3.80	
NA-MW-03	10/11/91	184182.5	144746.6	43.06	43.30	4.50	14.50	3.50	14.50	1.50	3.50	
NA-MW-04	10/11/91	182454.9	146144.6	42.49	42.78	10.30	20.30	9.30	20.30	7.30	9.30	_
NA-MW-05	02/20/97	184855.6	148308.3	47.91		2.25	11.25	1.25	11.25		1.25	
NA-MW-06	02/20/97	184617.2	149208.1	47.48		2.00	11.00	1.25	11.25	-2.00	1.25	
NA-MW-07	02/20/97	184335.3	147216.0	48.34		2.25	11.25	1.25	11.25		1.25	12.00
NA-PZ-01	11/13/91	183755.1	147369.5	42.72		5.00	10.00					
NA-PZ-02	11/13/91	183755.1	147369.5	43.80	44.11	5.00	10.00					
NA-PZ-03	11/13/91	182515.6	147279.1	43.19	43.49	5.00	10.00					
NA-PZ-04	11/13/91	182888.3	146907.3	41.45	41.66	5.00	10.00					
NA-PZ-05	11/13/91	183159.3	146629.3	41.32	41.59	5.00	10.00					
NA-PZ-06	11/13/91	183622.3	146232.5	40.80	41.02	5.00	10.00					
NA-PZ-07	11/13/91	183979.3	145976.8	43.67	43.94	5.00	10.00					
NA-PZ-08	11/13/91	182032.9	146148.7	40.74	40.89	5.00	10.00					
NA-PZ-09	11/13/91	182771.4	145889.8	40.48	40.76	5.00	10.00					
NA-PZ-10	11/13/91	183206.1	145538.2	43.35	43.63	5.00	10.00					
NA-PZ-11	11/13/91	183627.1	145197.7	42.19	42.48	5.00	10.00					
NA-PZ-12	11/13/91	184148.7	144778.3	43.13	43.13	5.00	10.00					
NK-MW-01	02/16/90	186195.2	148084.0	55.43	55.76	7.00	12.00	5.00	12.00	3.00	5.00	3.00
NK-MW-02	02/13/90	185325.7	147796.5	48.40	49.64	5.00	10.00	4.00	10.00	2.00	4.00	10.00
NK-MW-03	02/16/90	185362.9	148327.7	50.94	51.44	7.00	12.00	6.00	12.00	4.00	6.00	2.00
NK-MW-04	02/15/90	185331.2	148048.2	46.11	46.69	7.00	12.00	6.00	12.00	4.00	6.00	
NK-MW-05	02/13/90	184855.6	148308.3	46.65	47.70	4.00	9.00					10.00
NK-MW-06	10/01/91	184617.2	149208.1	50.57	50.76	4.00	11.50	3.00	11.50	1.00	3.00	
NK-MW-07	10/07/91	184335.3	147216.0	47.60	47.78	5.00	12.50	4.00	12.50	2.00	4.00	
NK-MW-08	10/07/92	184896.6	148429.1	50.96		4.00	11.00	3.50	11.00		3.50	11.00
NK-MW-09	10/07/92	184894.5	148385.6	50.43	50.60	4.00	11.00	3.00	11.00		3.00	11.00
NK-MW-10	10/07/92	184847.3	148392.2	49.78	49.90	3.50	10.50	2.50	11.00		2.50	11.00
NK-MW-11		184550.0	148365.0	46.75	46.75							
NK-MW-12		184223.3	147716.3	46.75		4.50	9.50					12.00
NK-MW-13		184459.3	147714.0	50.59		5.00	15.00					
NK-MW-14S		184887.7	147770.8	49.32		5.00	10.00					

Table 2 Monitoring Well Construction Data Summary Airport and Klondike Areas, Pratt & Whitney, East Hartford, Connecticut

		A1	i port and n	Tollulke A	1043, 114	tt & vinithey,	Last IIa	1 1101 11, COI	meeneut	·	An port and Kiondike Areas, Fract & Wintney, East Hartford, Connecticut								
Monitoring Well ID	Completion Date	Easting	Northing	Reference Elevation	Top of Casing Elevation	Depth to Top of Screen	Depth to Base of Screen	Depth to Top of Filter Pack	Depth to Base of Filter Pack	Depth to Top of Seal	Depth to Base of Seal	Total Depth of Boring							
NK-MW-15S		186014.8	147387.9	57.49		2.00	12.00												
NK-MW-16	05/17/93	185369.3	148354.0	51.44		3.50	13.50												
NK-MW-17	07/19/96	184560.7	148863.6	49.57		4.00	9.00					15.00							
NK-MW-18	07/11/96	185358.2	148289.4	47.31		1.70	10.70					15.00							
NK-MW-19	07/18/96	184560.9	148244.5	46.38		1.70	10.70	0.70	10.70	-1.30	0.70	15.00							
NK-PZ-01		185328.8	148368.0	46.85															
NK-PZ-02		185339.5	148319.6	46.77															
SA-MW-01	02/13/90	182912.2	144567.5	42.12	42.99	13.00	18.00												
SA-MW-02I	02/16/90	181788.5	143840.1	37.04	37.78	15.00	25.00												
SA-MW-03	10/10/91	182546.9	144407.3	40.36	40.48	10.00	20.00												
SA-MW-04	02/06/98	181919.9	143583.9	38.13	38.31	7.50	17.50					17.50							
SA-MW-05I	10/09/91	182358.5	143938.4	37.81	38.65	13.50	23.50												
SA-MW-05S	10/09/91	182359.7	143932.9	38.07	38.48	4.50	14.50												
SA-PZ-01	11/13/91	181881.2	145633.8	39.56	39.76	5.00	10.00												
SA-PZ-02	11/13/91	182103.7	145507.9	40.00	40.27	5.00	10.00												
SK-MW-01	02/20/90	185636.9	144814.9	50.45	51.22	8.00	13.00												
SK-MW-02	02/22/90	185424.2	145840.4	50.18	51.30	9.00	19.00												
SK-MW-03	02/23/90	185356.5	145553.5	49.70	49.91	6.00	16.00												
SK-MW-04	02/27/90	185636.9	145226.6	50.50	50.81	5.60	15.60												
SK-MW-05	02/13/90	184770.0	145767.4	47.19	47.80	6.00	11.00												
SK-MW-06	02/14/90	184740.7	146811.2	48.43	48.80	7.00	12.00												
SK-MW-07	02/15/90	185172.4	147005.9	51.06	52.19	8.00	13.00												
SK-MW-08D	02/23/90	184537.2	145559.5	45.02	45.21	49.00	59.00	47.00	59.00	45.00	47.00								
SK-MW-08S	02/16/90	184542.3	145560.0	42.92	43.43	7.50	12.50												
SK-MW-09	10/04/91	186692.4	146766.8	63.67	64.24	5.00	15.00												
SK-MW-10	10/09/91	186235.9	145509.2	55.24	55.52	5.00	15.00												
SK-MW-11	10/07/91	185100.2	146080.8	49.58	49.77	5.00	15.00												
SK-MW-12	10/02/91	184584.6	146773.0	45.92	46.34	4.50	14.50												
SK-MW-13	10/07/91	184869.3	144540.8	42.85	43.15	2.60	12.60												
SK-MW-14I	05/17/93	184985.2	145793.7	46.85		10.00	15.00												
SK-MW-15I	05/14/93	185236.6	146418.8	49.35		10.00	15.00												
SK-MW-16	05/13/93	184352.9	146630.4	45.28		4.50	9.50												
SK-MW-19	08/29/96	184607.1	146126.0	48.99		3.50	13.50	3.50	13.50			16.00							

Table 2 Monitoring Well Construction Data Summary Airport and Klondike Areas, Pratt & Whitney, East Hartford, Connecticut

Monitoring Well ID	Completion Date	Easting	Northing	Reference Elevation	Top of Casing Elevation	Depth to Top of Screen	Depth to Base of Screen	Depth to Top of Filter Pack	Depth to Base of Filter Pack	Depth to Top of Seal	Depth to Base of Seal	Total Depth of Boring
SK-MW-20	08/29/96	184672.7	145738.3	50.05		4.00	14.00	4.00	14.00			16.00
SK-MW-21	08/29/96	184710.1	145509.0	47.86		3.50	13.50	3.50	13.50	1		14.00
SK-MW-22	08/29/96	184748.8	145265.4	47.44		3.00	13.00	3.00	13.00			16.00
SK-MW-23	08/26/96	184573.4	145344.2	46.39		3.00	13.00					16.00
SK-MW-24	08/26/96	184824.5	146376.8	49.15		3.00	13.00	3.00	13.00			16.00

Table 3
Soil Physical Properties Data Summary
Airport and Klondike Areas, Pratt & Whitney, East Hartford, Connecticut

					Grain	Size Distributi	on Parameters		
Boring ID	Sample Depth	Matrix Porosity	Cu	Cc	Percent Fine Gravel	Percent Coarse Sand	Percent Medium Sand	Percent Fine Sand	Percent Silt/Clay
NK-MW-06	5' - 7'	40.6	1.8	1.1	0.0	1.2	55.3	42.1	1.4
NK-MW-07		41.8	Not Reported						
NA-SB-01	10' - 12'	37.1	1.9	0.8	0.0	3.0	53.9	42.2	0.9
SK-MW-09	14' - 16'	40.5	2.3	0.8	4.2	4.3	58.5	32.8	0.2
SK-MW-13		43.3	•			Not Repor	ted		
SK-SB-10		40.3				Not Repor	ted		
SA-MW-04		36.6				Not Repor	ted		
SA-MW-05		39.6				Not Repor	ted		
SA-SB-03	15' - 17'	39.2	1.6	1.6	0.0	0.1	60.4	37.4	2.1

Notes: Soil physical properties data from Haley & Aldrich, 1993

Table 4 Area and Sampling Type Identifiers Airport and Klondike Areas, Pratt & Whitney, East Hartford, Connecticut

Anpo	ort and Kiondike Areas, Fratt & Whith		omicetical	
Area		Sampling Type		
Designation	Area	Identifier	Explanation	
AB	Within A Building	MW	Monitoring Well	
BB	Within B Building	PZ	Piezometer	
СВ	Within C Building	SW	Surface Water	
DB	Within D Building	SD	Sediment	
EB	Within E Building	CC	Concrete Chip	
FB	Within F Building	SS	Surface Soil	
GB	Within G Building	SB	Soil Boring	
HB	Within H Building		- 	
JB	Within J Building			
KB	Within K Building			
LB	Within L Building			
MB	Within M Building			
CS	Colt Street Facility			
EA	Engineering Area	i		
ET	Experimental Test Airport Laboratory			
LM	Area Outside Buildings L and M			
NA	North Airport Area			
NT	North Test Area			
NW	North Willgoos Area			
PH	Powerhouse Area			
SA	South Airport Area	1		
SK	South Klondike Area]		
ST	South Test Area]		
SW	South Willgoos Area	1		
WT	Waste Treatment Area			
XT	Experimental Test Area			

DRAWINGS

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GROUNDWATER INVESTIGATIONS SOUTH KLONDIKE DEBRIS PILE LOCATION & CONSTITUENTS DETECTED MAP								

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GROUNDWATER INVESTIGATIONS SOUTH KLONDIKE UNDEVELOPED LAND LOCATION & CONSTITUENTS DETECTED MAP					

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GROUNDWATER INVESTIGATIONS X-194 AREA ABOVEGROUND STORAGE TANK LOCATION & CONSTITUENTS DETECTED MAP					

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GROUNDWATER INVESTIGATIONS FORMER FIRING RANGE AREA LOCATION & CONSTITUENTS DETECTED MAP				

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Comments:					
SURFACE WATER & SEDIMENT INVESTIGATIONS					
LOCATION & CONSTITUENTS DETECTED MAP					

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DRAFT

ATTACHMENT A

Monitoring Well Construction Logs

							10-MM-44
AS)	HALEY & GLA	ALDRICH, ASTONBURY INECTICUT	INC.	TES	T BO	ORING REPOR	T BORING NO. NA-B-01
PROJECT CLIENT CONTRACT		r & whithe	Y AIRCRAF	T	NG PROGRA	M EAST HARTFORD, CONNECTICU	FILE NO. 90358-40 SHEET NO. 1 of 1 LOCATION N 150,088
	ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCE	i
TYPE INSIDE D HAMMER N		(IN) (LB) (IN)	HSA 3-3/4 	ss 1-3/8 140 30	 -	RIG TYPE MOBIL 853 BIT TYPE DRILL MUD OTHER	ELEVATION 46.3 DATUM MDC/NGVD START 10 October 1991 FINISH 10 October 1991 DRILLER K. Christiana H & A REP C. Osgood
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NO.& REC. (IN)	SAMPLE DEPTH (FT)	ELEV./ DEPTH (FT)	VISUAL DESCRI	IPTION AND REMARKS
- 0 -		2 2 8	S1 20	1.0	44.3 2.0	Loose dark brown loamy trace fine sand	SILT, little roots, -SOO/FILL-
		10				Medium dense brown fine sand	·
- 5 -		5 5	S2 12	5.0 7.0		-S Loose gray fine SAND, t	TREAM TERRACE DEPOSITS-
		5					
- 10 -		3 5 5	\$3 :6	10.0	,	Loose brown medium to f	
- 15 -						-51	TREAM TERRACE DEPOSITS-
.,		2	s4 12	15.0 17.0	30.8 15.5	Soft gray laminated silves sand in frequent parting	
		2 3 2	S5 24	17.0 19.0		Medium stiff gray lamina fine sand in frequent pa	
- 20		2		20.0			-GLACIOLACUSTRINE-
		3 2 3 3	56 16	20.0	24.3	Same as S5	
					22.0	Bottom of Explora	ition at 22.0 ft.
- 25 -							
		WATER LE				SAMPLE IDENTIFICATION	SUPPLARY
DATE 10/10/91		ELAPSED TIME (HR)		PTH (FT) T BOTTOM OF HOLE 7.0	O: WATER 5.5	T	/ERBURDEN (LIN FT) 22.0 CCC CORED (LIN FT) UMPLES 6s
.5, 10, 71			7.0		,,,	S SPLIT SPOON	ORING NO. NA-B-01

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WATER

5.0

OF CASING OF HOLE

7.0

5.0

10/10/91

THIN WALL TUBE

UNDISTURBED SAMPLE

ROCK CORED (LIN FT)

SAMPLES

BORING NO.

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5s

NA-B-03

ASA	GL/	ALDRICH, ASTONBURY NECTICUT	INC.	TES	T BO	RING REPORT BORING NO. NA-B-04
PROJECT CLIENT CONTRACT	PRAT	-WIDE ENVI T & WHITNE ENCE WELTI	Y AIRCRAF	T.	ING PROGRA	FILE NO. 90358-40 SHEET NO. 1 of 1 LOCATION N 146,145
	ITEM		CASING	DRIVE SAMPLER	CORE	DRILLING EQUIPMENT & PROCEDURES
TYPE INSIDE D HAMMER W HAMMER F		(IN) (LB) (IN)	HSA 3-3/4 	ss 1-3/8 140 30		RIG TYPE CME75 BIT TYPE DRILL MUD OTHER ELEVATION 42.8 DATUM MDC/NGVD START 10 November 199 FINISH 10 November 199 DRILLER B. Ursin H & A REP S. Gleason
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NO.& REC. (IN)	SAMPLE DEPTH (FT)	ELEV./ DEPTH (FT)	VISUAL DESCRIPTION AND REMARKS
0 -		3 4	\$1 23	1.0	40.8	Loose brown medium to fine SAND, little silt
		3 3	3	3.0	2.0 40.3 2.5	Loose brown loamy fine SAND -TOPSOIL- Loose brown medium to fine SAND
- 5		3 3 4	\$2 24	5.0 7.0		Same as S1, varies to fine SAND, trace silt
		3				-STREAM TERRACE DEPOSITS-
- 10 -		2 3 5 4	\$3 24	10.0 12.0		Same as S1, trace coarse SAND
						-STREAM TERRACE DEPOSITS-
- 15 -		3 4 5 5 5	S4 24	15.0 17.0		Same as S1
- 20 -		2	s5	20.0		Same as \$1
		2 3 3 2 2	10 S6 10	22.0 22.0 24.0	21.8 21.0	Medium stiff gray clayey SILT -GLACIOLACUSTRINE- Same as S5, varved
- 25 -		2 2	10	24.0	18.8 24.0	Bottom of Exploration at 24.0 ft.
		WATER LE				SAMPLE IDENTIFICATION SUMMARY
DATE 10/11/91 10/15/91	TIME	ELAPSED TIME (HR) 5.0 20.5		BOTTOM OF HOLE 5.0 6.0	O: WATER	O OPEN END ROD THIN WALL TUBE UNDISTURBED SAMPLE SPLIT SPOON OVERBURDEN (LIN FT) 24.0 ROCK CORED (LIN FT) SAMPLES 6s

LEA Com: Client: P Location:	ratt & Whitney East Hartford	Start Date: 2/20/97 End Date 2/20/97	Boring ID NA-MW-06
Drilling Control of the Control of Control o	tethod: Geoprobe Method: Macro Core ter Observations:	Drill Rig: Geoprobe 5 Surface Elevation: Northing: Easting:	on Sweeton
Elev./ Depth (Ft).	Well Construction Diagram	Sample Description Color, Prim. Grain Size, Sec. Grain Sizes, Moist, Sort, Spher, Angul, Sed Struct, Density, Cohesiveness	TYPE: Flush Mount
		Bottom of boring	BACKFILL Type:N/A Top Depth: Bottom Depth: CASING Diameter:5" Length:4' Stick Up: SEAL Type:Bentonite Quantity:1 cup Top Depth:Grade Bottom Depth:1' SCREEN Type:PVC Prepack Screen Diameter:1.5"
20			Slot Size:
24			Type: Native soil, natural Top Depth: 4.5' Bottom Depth: 12.25
Comments	<u></u>		

NK-WM-01

	WEST:	CCCHO	ENMACONISHIA	L å:	GE S	TECHINO	AL SERV	ICES, INC.	1,030	1 of 1	
النيز))		TIB TLUMET STREET (SGB)	1. GC54) 352-	CŁ 10 649:	DAMI, MA DIE	33		Boring/Ires No.:	CAS-1	
Protect	Nome	CAS			_				Well Elevation:	55.76	
Chent A		U T.C.							OrBi Forman:		
	Location:	CAS-1							Westinghouse Ge		
	Controctor.		TI ASSOC.						Start Date:	2-12-	
ure.r.g	Method:	HOLLO	STEW AUCER				Auger Size		End Dote:	2-12-	
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(FT)	""	To	Brows per 6" on spilt-spoon	(m)	(m)	Reading	Depth	1	Drilling is	ntermetten	į
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10 - 3		m, dense		m. :	}	9.	O ries; 2.0	0 stickup. Q	vartz sand pock depth. Backfill	from 12-6' de	ett.
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THE WATER AT LEASING AT STABILIZATION WESTINGHOUSE	1	ויו	, 9, 5	dense:15 - 30	, 0 1	g	8 ,
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and heavy minergue compone about 5%; pinkleh							1.0-
poorly sorted, loose, moist, very dark graylan brown			- -				
Very Pho - Nedum Sand, subraunded - subangular,			-				
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Post with arganic-rich sand, soil			ã	S-3-1-1	٩ ~	-	
Orting Information	5	Reading	(5) (5 .)	out par a	a '-	ř	} :
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Peetingrouse Geologist DJ-12-00					C15-4	Colic	3
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Project		CAS							Well Elevation:	49.64	
Dient N		U.T.C.							Orsi Forman:		
	Location:	CAS-4							Westinghouse Ge	ologist DUFFI)	1
	Contractor.		7022A 11						Stort Date:	2-14-	90
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Meetinghouse form "BL/P1 Res. 1 8/1/89

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Weetinghouse form "BL/P1 Asv. 1 8/1/89

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\$.5" riser. Quarts sand pock from 12-5" depth. Bentanite pasets from 5-3" depth. Beckfiled 1.0-0" depth.	Bentonite pur		3 6 7	1 I	3 8 8 8 8 8	8 9	ة · ن
of 120° dote set of 12-7' depth	NO ed en		8	2	. 500		01
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Pho - Hedium Sand, subanguar - subraunded, 0.8			+		-		
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Auphost (parking lot) and fill.			12	0-23-12-14	የ ~'	-	
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consists of a 2" spill-spean after using a	A STATE OF THE STA			!§ -		Dring Hemod	2
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heelinghouse Geologist DUFTIH				1	0.45	Cant None	10
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eity Smarr (30k)		70507	STITL AUGO	Standard	Test	Blows per 6	1-4-8-10					10-1-1-1-1						8-9-12-13					i						9-9-9-9	-				:	HESIVE	Density Blown /Ft	4 0 4	. :	9	
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ASA	GLA	ALDRICH, STONBURY INECTICUT	INC.	TES	т вс	ORING REPORT BORING NO. NX-MW-06
PROJECT CLIENT CONTRACT	PRATI	WIDE ENVI & WHITNE	Y AIRCRAF	T	NG PROGRA	M EAST HARTFORD, CONNECTICUT FILE NO. 90358-40 SHEET NO. 1 of 1 LOCATION N 149,208
	ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES
TYPE INSIDE D HAMMER W HAMMER F		(IN) (LB) (IN)	HSA 3-3/4 	SS 1-3/8 140 30		RIG TYPE CME75 BIT TYPE DRILL MUD OTHER ELEVATION 49.0 DATUM MDC/NGVD START 1 October 1991 FINISH 1 October 1991 DRILLER B. Ursin H & A REP C. Osgood
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NO.& REC. (IN)	SAMPLE DEPTH (FT)	ELEV./ DEPTH (FT)	VISUAL DESCRIPTION AND REMARKS
- 0 -		6 13 8 9	S1 18	1.0	46.0	Medium dense brown medium to fine SAND, little fine gravel -FILL-
- 5 -		6 7 6 8	\$2 10	5.0 7.0	3.0	Medium dense red-brown medium SAND, trace fine sand
						-STREAM TERRACE DEPOSITS
- 10 -		2 2	S3 10	10.0	37.5	Very loose red-brown medium SAND
		2 2 2	S4 14	12.0 14.0	11.5	Very soft red-gray laminated silty CLAY, trace fine sand in frequent partings -GLACIOLACUSTRINE-
- 15 -		2 2 2 2 2 2		14.0	33.0	Very soft gray laminated silty CLAy, trace fine sand in frequent partings -GLACIOLACUSTRINE-
					16.0	Bottom of Exploration at 16.0 ft. Note: Observation well installed at 11.5 ft.
- 20 -						
- 25 -						
		WATER LE		TH (FI) !	o:	SAMPLE IDENTIFICATION SUMMARY O OPEN END ROD OVERBURDEN (LIN FT) 16.0
DATE 10/1/91	1300	TIME CHRY		BOTTOM	WATER 5.4	OPEN END ROD OVERBURDEN (LIN FT) 16.0 THIN WALL TUBE ROCK CORED (LIN FT) U III UNDISTURBED SAMPLE SAMPLES 5s SPLIT SPOON
						BORING NO. NK-MW-06

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118 TUPLET STREET SCHOOL TOWN, MA STRAAS AS	COSE ENGRANCES, INC. A GEORGICAL SERVICES, INC. 116 TUNER STREET GEORGEOM, MA GIBLS AS TO COST STREET GEORGEOM, MA GIBLS A	ŀ	Str. 3.7			A POST	0.00	100000	,
118 TUPET STATE CLORAL MA OTBAS AS TC.	SUBSET TO THE TOTAL SERVICES, INC. 116 TOTAL S	Start Date: 2-12-90			İ	33-		Localion	-
118 TUPET STATE CLORAL MA CIBAN (508) 352-6492	COSE ENTRY NEED A & SED RECHINGAL SERVICES, INC. (SCE) 357-6492	I man I honouse Carpootet: DLSFDH						***	9
118 TUPLET STREET GEOGRAPH, MA CIBAN	SUBSET STATES AND SECRETORS SERVICES, INC. 116 TOPICS STATES SERVICES, INC. (SCE) SEL-6492	Ord Formon:						13	in.
116 TUPETE OFFICE CONTRACTORS, MA 01833	WESTINGHOUSE ENGRAPHICAL & SEDICCHINGAL SERVICES, INC. CONTROL OF THE CONTROL OF LA CIDAS (SCE) 351-6492	Heal Condition: 42.89					^		ij
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CONFIDENTIAL

ES, INC. 1994 Borng/wei No. 195-11 Borng/mei No. 195-11 Seel Engellen: 37.78	Crit former:	The thoughouse Georgist DUFTH	3.75° ED End Dote: 2-16-90	of a 2" split-speon drien		Flad Committeetion and Drilling Information						,		152	Very Fine Sand, subanquiar, moderatery sorted, lesses,	11 To 12 To 17 (7) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1			200	(. Y/3/2), no sedimentary effections when			४ • वा													2 25.0	10.0' extrem with. OIO' state set at 25-15 teath. 17.0' riser, 20' etickup. Ouoriz sand poor from 25-15 death.	eta from 13-11" dapth. Becarlied 11.0-0' dapth.	MATES AT LEACHES	12.25 37.78	11-040
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ENCHOLHENTAL & GEOTECHNICAL IN TIDACY STREET GEORGIOM, MA 01835 (SOB) 352-6462	CAS U.T.C.		V 2000			Blove per 8" (ft)	B-6-10-11			21449			5-7-9-15	+		5-17-17			ינוני					i		_				+				+	COHESIVE SOILS	Danielly Blows /Ft	4 1 4	• •	2 - 32	8	
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/G		ALDRICH, ASTONBURY INECTICUT	INC.	T	ES	T BC	ORING REPORT BORING NO. SA-B-03
PROJECT CLIENT CONTRACT	PRAT	WIDE ENVI T & WHITNE ENCE WELTI	Y AIRCRAF	Ţ		NG PROGRA	M EAST HARTFORD, CONNECTICUT FILE NO. 90358-40 SHEET NO. 1 of 2 LOCATION N 144,407 E 182,547
	ITEM		CASING		RIVE MPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES
TYPE INSIDE D KAMMER W		(IN) (LB)	HSA 3-3/4 	1	ss -3/8 140 30	 -	RIG TYPE MOBIL B53 BIT TYPE DRILL MUD OTHER ELEVATION 38.9 DATUM MDC/NGVD START 9 October 1991 FINISH 9 October 1991 DRILLER K. Christiana H & A REP S. Osgood
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NO.& REC. (IN)	D	MPLE EPTH (FT)	ELEV./ DEPTH (FT)	VISUAL DESCRIPTION AND REMARKS
0				П		37.9	Gray brown fine SAND, trace roots, silt and
	 -	5 5	\$1 12	Ø	1.0	1.0	-FILL-
		7 6	12		٠.٠		Medium dense brown fine SAND, little silt, trace loam
							-STREAM TERRACE DEPOSITS-
							Loose brown fine SAN(
5 –		3	\$2 19		5.0		
		3 4 5	19		7.0	32.4 6.5	
						6.5	Loose brown medium SAND, little fine sand -STREAM TERRACE DEPOSITS-
							STREAM TEXANCE DEPOSITS*
							2017 2018
10 -		4	\$3	7	10.0		Medium dense brown medium SAND, trace fine
		6 10 12	10		12.0		32.0
		12		<u> </u>			
15	<u> </u>	4	S4	7	15.0		Medium dense brown medium SAND, trace fine
		7	24		17.0		
							-STREAM TERRACE DEPOSITS-
							Sincer tenner verdalla
20 -		7	S5	d	20.0		Medium dense brown medium to fine SAND
ļ		5	11		22.0		
1		7	 	74			
							刻
25 J		WATER LE	VEL DATA				SAMPLE IDENTIFICATION SUMMARY
DATE	TIME	FLAPSED	DEF		(FT) T		O PEN END ROD OVERBURDEN (LIN FT) 31.0
		TIME (HR)	<u>OF CASING</u>	0F	HOLE	WATER	THIN WALL TUBE ROCK CORED (LIN FT) U UNDISTURBED SAMPLE SAMPLES 8s
0/9/91)/10/91	1415 0815		20.0 20.0	ł	0.0	6.1 8.6	S SPLIT SPOON
7/10/91	1130		20.0	2	0.0	12.6	BORING NO. SA-B-03

ASP	HALEY & ALDRICH, GLASTONBURY CONNECTICUT	INC.	TES1	ВС	PRING REPORT BORING NO. SA-B-03 FILE NO. 990358-40 SHEET NO. 2 of 2
DEPTH (FT)	CASING SAMPLER BLOWS BLOWS PER FT PER 6 IN	NO.& REC.	SAMPLE DEPTH (FT)	ELEV./ DEPTH (FT)	VISUAL DESCRIPTION AND REMARKS
- 30 -	1 2 3 5 3 5 3 2 6 5 2 2 2 2 2	\$6 12 \$7 15 \$8 16	25.0 27.0 27.0 29.0 31.0	12.4 26.5 7.9 31.0	Stiff gray laminated silty CLAY, trace fine sand Stiff gray laminated silty CLAY, trace fine sand in frequent partings -GLACIOLACUSTRINE- Soft gray laminated silty CLAY, trace fine sand in frequent partings
- 35 -					
- 40 -		· ·			
- 45 -					
- 50 -					
- 55 -					
- 60 -		<u> </u>	1 1 1		BORING NO. SA-B-03

							3/4-1400
ASA	, GLA	ALDRICH, STONBURY NECTICUT	INC.	TES'	T BO	RING REPORT	BORING DETADAW+04
PROJECT CLIENT CONTRACT	PRATT	WIDE ENVI & WHITNE	Y AIRCRAF	:T	NG PROGRA	M EAST HARTFORD, CONNECTICUT	FILE NO. 90358-40 SHEET NO. 1 of 2 LOCATION N 143,584
	ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES	E 181,920
TYPE INSIDE D HAMMER W HAMMER F		IN) LB) IN)	HSA 3-3/4 	ss 1-3/8 140 30		RIG TYPE CHE75 BIT TYPE DRILL MUD OTHER	ELEVATION 36.3 DATUM MDC/NGVD START 7 October 1991 FINISH 8 October 1991 DRILLER B. Ursin H & A REP C. Osgood
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NO.& REC. (IN)	SAMPLE DEPTH (FT)	ELEV./ DEPTH (FT)	VISUAL DESCRIPTION	AND REMARKS
- 0 -					35.3	Visible in borehole: Brown g	ravelly coarse to
		4 4 3	\$1 24	1.0	1.0	fine SAND, trace asphalt, roo Loose brown medium to fine SA	-FILL-
		3			:		
- 5 -		4 4 3 3	\$2 12	5.0 7.0		Loose brown medium to fine SA	ON
						-STREAM	TERRACE DEPOSITS-
- 10 -		3 4 3 3	\$3 17	10.0 12.0		Loose brown medium to fine SAI sand	ND, trace coarse
- 15 -		4 3 4 7	S4 18	15.0 17.0		Loose brown medium SAND, littl fine sand	le coarse sand,
						-STREAM I	TERRACE DEPOSITS-
- 20 -		2 1 2	S5 15	20.0		Very loose brown medium SAND, sand, trace fine sand	little coarse
		4	· · · · · · · · · · · · · · · · · · ·				
		4	\$6 24	24.0		Loose brown medium SAND, littl	le coarse sand
- 25 _		WATER LE	Z4_	26.0	11.3	SAMPLE IDENTIFICATION	SUMMARY
DATE	TIME	FLAPSED	DEF	TH (FT) T	0:		EN (LIN FT) 30.0
		ITIME CHRY	OF CASING		WATER	The survey states where	ED (LIN FT) 8s
10/7/91	1 530 0730		24.0	25.5 21.0	9.3 9.1	S SPLIT SPOON BORING N	
		1 1		<u> </u>		Joenna N	

BORING NO. SA-MW-04 FILE NO. 50358-40 , SHEET NO. 2 of 2 HALEY & ALDRICH, INC. GLASTONBURY CONNECTICUT TEST BORING REPORT SAMPLER SAMPLE BLOWS NO.& REC. PER 6 IN (IN) SAMPLE DEPTH (FT) ELEV./ DEPTH (FT) DEPTH CASING BLOWS PER FT VISUAL DESCRIPTION AND REMARKS (FT) 25 25.0 4 Loose gray laminated fine sandy SILT 6 Loose gray laminated silty fine SAND **S**7 12 26.0 14 14 28.0 -GLACIOLACUSTRINE-21 33 8.3 28.0 Loose gray laminated clayey SILT, some fine 28.0 \$8 16 30.0 sand 6.3 30 30.0 Bottom of Exploration at 30.0 ft. 35 40 45 50 55 60 SA-MW-04 BORING NO.

	HALEY & GLA	ALDRICH, STONBURY INECTICUT	INC.	TES	T BO	RING REPORT	BORING NO. SA-B-0
PROJECT CLIENT CONTRACT	PRATI	WIDE ENVI	Y AIRCRAF	Ŧ	NG PROGRA	M EAST HARTFORD, CONNECTICUT	FILE NO. 90358-40 SHEET NO. 1 of 2 LOCATION N 143,933
	ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES	E_182,360
TYPE INSIDE D HAMMER W HAMMER F		(IN) (LB) (IN)	HSA 3-3/4	ss 1-3/8 140 30	 -	RIG TYPE CME75 BIT TYPE DRILL MUD OTHER	ELEVATION 36.7 DATUM MDC/NGVD START 8 October 199 FINISH 8 October 199 DRILLER B. Ursin H & A REP S. Gleason
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NO.& REC. (IN)	SAMPLE DEPTH (FT)	ELEV./ DEPTH (FT)	VISUAL DESCRIPTION	AND REMARKS
0 -					35.7		-TOPSOIL-
		3 3 3 3	\$1 24	1.0 3.0	1.0		D, some areas
5 -			\$2 24	5.0 7.0		Same as S1	
10 -			S3 24	10.0		-STREAM T Same as S1	ERRACE DEPOSITS-
15 -			S4	15.0		Brown coarse to fine SAND, tra	ce fine gravel
			24	17.0		-STREAM TI	ERRACE DEPOSITS-
20 –		3 3 3	\$5 24	20.0	15.2	Same as S4	
!		3 4 3	\$6 24	22.0 24.0	21.5 13.7 23.0	Medium stiff gray silty fine S	AND
25		1	\$7 12	24.0 26.0	11.7	Soft gray fine sandy SILT, tra- clay	ce to little
	, -	WATER LE	VEL DATA			SAMPLE IDENTIFICATION	SUMMARY
0/8/91	TIME	ELAPSED TIME (HR)		BOTTOM OF HOLE 12.0	O: WATER 8.0	* IT *:::::	EN (LIN FT) 30.0 ED (LIN FT) 9s
		,				BORING NO	o. SA-B-05

5A-MW-05

ASA	HALEY & AL GLAST CONNE	DRICH, I ONBURY CTICUT	INC.	TES	т вс)R	ING REPOR	Т	BORING NO. SA-B-05 FILE NO. 90358-40 SHEET NO. 2 of 2
DEPTH (FT)	BLOWS	SAMPLER BLOWS ER 6 IN	SAMPLE NO.& REC. (IN)	SAMPLE DEPTH (FT)	ELEV./ DEPTH (FT)		VISUAL DESCR	IPTION A	AND REMARKS
- 25 -		2			25.0				
		2	S8	26.0	,		[
		1	15	26.0 28.0			Same as S7, varies to s		
		1							LACIOLACUSTRINE-
		2	s9 18	28.0 30.0			Soft gray varved silty	CLAY	
ľ		1 2			6.7				
- 30 -					30.0	1.3	Bottom of Explor	ation at	t 30.0 ft.
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TO MOTON VESOC 20-22 7 - 5 Rong SIE VESTENDII ENTITED THE STATE OF Bors per d' Standard Peneuration Test 7-10-13-17 11-6-7-11 굺 Sanores. 3 g 7 2 8 8 7 8 2 24 NOTES: Pandang NAV Auger Size 3.75" 10
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5K-MW-06 WESTINGHOUSE ENVIRONMENTAL & GEOTECHNICAL SERVICES, INC. 118 TOWNEY STREET, OCCUPACIONNI, MA 01833 1 of 2 Borng/well No: CA5-6 Prestinghouse Job #: Well Devotion: 46.00 Probat Name U.T.C. Orli Farman Chart Name estingnouse Geologist: DUFTIN CAS-6 C. WELTI ASSOC boring Location: orting Contractor Start Date: 2-14-90 Auger Size 3.75" 10 2-14-90 HOLLOW STEW AUGER End Date: Orting Method. Unless noted, sempler constate of a 2" split-spean 140 ts, bernmer faling 30 in. weing a D SAMPLE Standard Penetration Test Range Field Classification Strate From H Change l To HMU and Store per 6" (m) Orsing information (m) (FT) 1 0-2 2-2-2-4 ī Ne recovery, surficial meterial is fill (0-2). 1.0-20-Sity, Very Fine Sand, subangular — subrounded, poorly earted, loose, molet, light effective from (2.5 Y/5/4), fill or soll developed in fluvial sand. 2-4 6-26-43-28 7.0 10-Medium Sand, subangular — subrounded, well serted, loose, molet, yearovish red (5 YR/4/6); ealer septemble to be due to hemotite stolning, grains are deminantly events with about 5% molecular and heavy minerus. fluvial band. 40 40 11=14=17=13 Medium — Coarse Sand, suborquier — subrounded, mocerately sorted, lease, set, brown (10 YR/4/3), grains are dominantly quartz with about 5% melics and heavy mineras, flunds and. _ +0 20 5.0 8.0 9-10-11-12 Fine - Hedium Sand; similar to at 7.0 5-6-7-6 Fine Sand; similar to a 9.0-GRANULAR SOILS COHESIVE SOILS NOTES: Ownerly Blows/Ft Bare /71 Denety 2" Med Point at 12.0"
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SK-MW-085 WESTRIGHOUSE ENGREPHENTAL & GEGTECHNICAL SERVICES, INC. Horn House Services, Grand Identical Services, Inc. Horn House No.:

(508) 352-6492 Heal Dengtion: 1 0/ 2 **(I** CAS-10A 43.43 Project Name Orsi Forman: U.T.C Clent Name CAS-10A C. WELTI ASSOC. estingnouse Geologist: DUFTIN Borng Location Stort Date: 2-16-90 Urting Contractor. Driving Method. Auger Size: 3.75° 10 2-16-90 HOLLOW STEM AUGER End Date: Unless noted, compler consists of a 2° split-spoon driven using a 140 to, hammer falling 30 in. 0 E P SAMPLE Standard Penetrotion Test Range Type & No. From | | To Strate Change Depth Pleid Corelfication and Driting Information н HNU Brown per 6" (h) (In) Reading (FT) 0-2 2-7-13-15 22 Cloyey Sand, fill. 1.0 20 20-2-4 16-20-21-20 16 Fine — Medium Sand, subangular — subrounded, well-sorted, loose, molet, dans grayten brown (10 YR/4/Z), grains are dominantly quartz with about 10% medias and heavy interests, Surial sand. 70. 4-6 7-10-14-12 20 edium Sand; similar to st-5.0 6.0 12-16-17-16 6-6 ove except sample is a Silgntly occurrent intense hematite staining that shows a radios yesiow (7.5 YR/6/6) stain an yesiowish brot(10 YR/5/8) sand. 8-10 4-9-10-11 9.0 - - -_ _ _ _ COHESIVE SOILS GRANULAR SOILS NOTES: Biges /Ft Ometry Blows /F1 Density 2" Well Point et 12.5" 5.0" screen with .010" siete eet et 12.5-7.6" deeth. 7.5 'neer. 2.0" stickup. Quortz sond pock from 12.5-5.5" deeth. Bentonite paliets from 3.5-3.5" deeth. Bockflood 14-12.5"; 3.5-0". 0 - 4 w. 100000 < 2 nos v 4 - 10 Jooes 2 - 4 ecft. 10 - 30 dense|4 - 8 m. etiff 30 - SO denee 8 - 15 etiff GROUNDWATER READINGS v. densei15 - 30 > 50 v. etiff WESTPHOHOUSE THE WATER AT CASING AT STABILIZATION BORDIC > 30 hard 3-7-90 2:30 PM 5.98 43.43 CA /OC CHECKED BY: CAS-10A

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Density Density Density	SRANULAR	SOILS	Sive	SILS	_	OTES					
V.	• /T!	Denetly	-9:3 vs /Ft	0	귉	3	1	ŀ			
Dones 2 - 4 Both 2.5 Fact 2.0 Stocks Cuerts and posts from 12.5 6.5	•	4. MOS	i < 2	ż	E .	4 N		910, 804	and of 125-7.5	9000	
Martin M	2	1000	12 - 4	•	r o	2	5 riser, 20' stk	S. Green	of sond poot fro	m 12.5-6.5	5000
4. dense 8 - 15 et 17 CROMOWATCH REACHUS v. dense 15 - 30 v. et 11 DATE T.DE NATES AT CASHO AT STABLIZATION > 30 North D-7-80 2,30 Pu 5.65" 43.43 HCXED BY:	8		B 1 + -	Ę	£ :	ī	ntonte paiets 1	7	S depth. Bocar	2md 14−12.5%	5
V. ORNEI S - 20 V. WITT DATE THE NATES AT CASHG AT STABLIZATION > 30 Nort 1-7-80 2:30 PW 5.55 43.43 HECKED BY:	8 .		21 - 12		l		CROUNC	WA .C. RE	VC:1:38		STONOHOUS.
7.30 Pu 555 43.43	Q		8 - 5	* <i>i</i>	ı	סאיד	7:05	PATER AT	CASNG AT S		55-F08
			8	•	1	1718	2.30 Pu	3.55	43.43		MANBER
	A OFFICE DE			ĺ	l				1		AS-10A

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			Eli cocumerat		<u> </u>	TECHANICA	I SERVI	1CES. INC. 1090 1 of 1
(F)	\ WESTH	"CHODEF	ENDOCHMENT	CECA	CC TO	WH. MA CIAS	35 (1)	boring/Inell No.: CAS-108
	,		(958	352-	6492			Westinghouse Job # :
F:1	Name	ÇAS						Drill Forman: 45.21
r.t N		U.T.C.						Westinghouse Geologiet: DUFFIN
	ocotion:	CAS-10	ASSOC.					Start Dot∉ 2-23-90
	Controctor: Method		STDA AUGER				mos Sis	1.75" W End Date: 2-28-90
0		APLE		Same		Unions notes	d, sumpler	consists of a 2" spilt-spoon after using a
ĔΙ		,	Standard Penetrotion	1		140 lb. ham	mer taking	30 M.
7	Туре	Range	Test	 			Strate	Field Closeffication
#	*	From				Heodepace	Change	end .
m	Ha	To	Blows per 6" on spilt-spoon	(10)	(m)	Reading	Depth	Drilling Information
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10-		L		4	_]			Clay, wet, coheshe, finely laminated, dark gray
	1	18-20	1-0-1-1	- 	24			(5 Y/4/2) locustrine day-sit.
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10-	1	50-52	1-1-1-2		34			Similar te above semple.
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3.0	·	1				<u> </u>		T.D. = 81"
		1		1				}
		 	<u></u>					A - 0 /02 /02 - 02 - 02 - 02 - 02 - 02 -
	}	 -		- ii		i i		On 2/23/90 orsied to 20' with 13" O.D. (8" I.D.) H.S.A. I installed 6" diameter steel pipe at 16" and pressure
-		 		1				grouted in piece.
		I						On 2/28/90 drilled through grout to 80', installed
		1						ot 59'.
		!	<u> </u>					
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<u> </u>	NULAR	30115	COHESIVE	, I. . I 2011 2		NOTES:		*
200/5			Blows/Ft		v Nor	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		· _
- 4	`	u looss			30C	T	West Point	it et 50.0°
- 10	•		2 - 4	••	noe	10	10 serem	ofth .010" slots set at 56-46" depth .0" stickup. Overtz send pack from 59-36" depth.
- s		m. dense		m.	61111	0.	entonite—Co	oment Grout from 38-0' septil.
- 5	so oc		0 - 15		-411			PO HIOWA TER DE ADMICE
50		u dense	}		-011	DATE	TRACE	WATER AT CASING AT STABILIZATION WESTINGHOUS
			> 30		hard:	3-7-90	ī	8.78' 45.21 MA48ER
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ASA	GLA	ALDRICH, STONBURY NECTICUT	INC.	TES	T BO	DRING REPORT BORING NO. SK-MW-09
PROJECT CLIENT CONTRACT	PRATI	WIDE ENVI & WHITNE	Y AIRCRAF	T	NG PROGRA	FILE NO. 90358-40 SHEET NO. 1 of 2 LOCATION N 146,767
	ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES
TYPE INSIDE D HAMMER W HAMMER F		(IN)	HSA 3-3/4 	ss 1-3/8 140 30	 -	RIG TYPE CME75 BIT TYPE DRILL MUD OTHER ELEVATION 62.5 DATUM MDC/NGVD START 3 October 1991 FINISH 4 October 1991 DRILLER B. Ursin H & A REP C. Osgood
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NO.& REC. (IN)	SAMPLE DEPTH (FT)	ELEV./ DEPTH (FT)	VISUAL DESCRIPTION AND REMARKS
- 0 -		2 2 2 5	\$1 24	1.0		Loose brown fine SAND, trace roots
					57.5	-STREAM TERRACE DEPOSITS-
- 5 -		3 4	\$2 24	5.0 7.0	5.0	Loose red brown fine SAND, little silt, indistinct stratification -STREAM TERRACE DEPOSITS-
					7.0	
- 10 -		2 3 3	S3 12	10.0		Loose brown fine SANO, little medium sand, indistinct stratification
		2 4 3	S4 11	12.0 14.0		Loose brown medium to fine SAND, indistinct stratification -STREAM TERRACE DEPOSITS-
- 15 -		7 2 1	\$5 20	14.0	48.5 14.0	Very loose brown medium to fine SAND, little coarse sand, trace fine gravel
		2 3 2 1	\$6 10	16.0 18.0	46.5 16.0	-STREAM TERRACE DEPOSITS- Very loose brown medium SAND, trace fine sand
		2 6	s7 6	18.0 20.0		Loose brown medium SAND, trace fine sand
- 20 -		5 1 2 3	\$8 10	20.0 22.0		Loose brown medium SAND, trace fine sand and coarse sand
		4				-STREAM TERRACE DEPOSITS-
- 25 -						Note: Augers sank, splitspoon stuck in augers due to running sand condition.
		WATER LE	VEL DATA			SAMPLE IDENTIFICATION SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEF BOTTOM	TH (FT) 1 BOTTOM	O:	O OPEN END ROD OVERBURDEN (LIN FT) 29.0 T I THIN WALL TUBE ROCK CORED (LIN FT)
10/3/91 10/4/91	1300 0745		OF CASING 10.0 22.0	0F HOLE 10.0 17.7	7.5 7.1	U UNDISTURBED SAMPLE SAMPLES 10s
.5, 3, , ,	3,43			''-'	, · · ·	BORING NO. SK-MW-09

BORING NO. SK-MW-09
FILE NO. 20358-40
SHEET NO. 2 of 2 HALEY & ALDRICH, INC. GLASTONBURY CONNECTICUT TEST BORING REPORT SAMPLER SAMPLE BLOWS NO.& REC. PER 6 IN (IN) SAMPLE DEPTH (FT) ELEV./ DEPTH (FT) DEPTH CASING BLOWS PER FT VISUAL DESCRIPTION AND REMARKS (FT) 25 59 25.0 5 2 27.0 36.5 26.0 22 Dense red brown silty medium to fine SAND, 17 trace coarse sand, and fine gravel 27 S10 27.0 Medium dense red brown silty fine SAND, little fine gravel, trace coarse to medium sand 8 6 29.0 9 -GLACIAL TILL-33.5 15 29.0 Auger Refusal on Probable Bedrock at 29.0 ft. 30 35 40 45 50 55 60 BORING NO. SK-MW-09

DKIMW-10

HALEY & ALDRICH, INC. GLASTONBURY TEST BORING REPORT BORING NO. SK-B-10 CONNECTICUT **PROJECT** SITE-WIDE ENVIRONMENTAL MONITORING PROGRAM EAST HARTFORD, CONNECTICUT FILE NO. 90358-40 SHEET NO. 1 of 2 PRATT & WHITNEY AIRCRAFT CLIENT CONTRACTOR CLARENCE WELTI ASSOCIATES, INC. LOCATION N 145,509 E 186,236 DRIVE CORE ITEM CASING DRILLING EQUIPMENT & PROCEDURES SAMPLER BARREL ELEVATION 53.9 RIG TYPE MOBIL 853 TYPE DATUM **HSA** SS MDC/NGVD BIT TYPE --START 8 October 1991 1-3/8 --INSIDE DIAMETER (IN) 3-3/4 DRILL MUD --FINISH 9 October 1991 HAMMER WEIGHT (LB) 140 OTHER DRILLER K. Christiana HAMMER FALL .. 30 (IN) H & A REP C. Osgood SAMPLER SAMPLE BLOWS NO. & REC. PER 6 IN (IN) DEPTH CASING SAMPLE ELEV./ DEPTH DEPTH VISUAL DESCRIPTION AND REMARKS (FT) PER FT (FT) (FT) 53.4 Visible in borehole: brown silty fine SANO, 0.5 little loam, roots 1.0 **S1** -FOREST HAT-4 20 3.0 Loose red brown fine SAND, trace silt 5 Medium dense red-brown fine SAND, little 5.0 medium sand, trace silt in single 1/2 in. seam 7.0 6 -STREAM TERRACE DEPOSITS-10 Medium dense red-brown medium to fine SAND, 10.0 \$3 trace coarse sand, silt in single 1/2 in. seam 18 12.0 8 10 15 Loose, gray-brown medium to fine SAND 4 15.0 17.0 20 20.0 Medium dense brown medium to fine SAND, trace 55 coarse sand 22.0 12 3 -STREAM TERRACE DEPOSITS-SAMPLE IDENTIFICATION SUMMARY WATER LEVEL DATA DEPTH (FT) TO: OPEN END ROD ELAPSED a OVERBURDEN (LIN FT) 29.0 DATE TIME TIME (HR) BOTTOM _BOTTOM T THIN WALL TUBE WATER ROCK CORED (LIN FT) OF CASING OF HOLE U UNDISTURBED SAMPLE SAMPLES 73 10/8/91 1430 25.0 21.3 11-1 S SPLIT SPOON 10/9/91 28.0 29.0 8.6 SK-B-10 10/9/91 BORING NO. 1100 15.0 15.0 8.1

5K-MW-10

ASA	HALEY & . GLA	ALDRICH, STONBURY NECTICUT	INC.	T	ES.	r BC	R	ING REPORT BORING NO. SK-B-10 FILE NO. 90358-40 SHEET NO. (2 of 2
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NO.& REC. (IN)	SA	MPLE EPTH (FT)	ELEV./ DEPTH (FT)		VISUAL DESCRIPTION AND REMARKS
25 -		12	\$6	7	25.0			Medium dense red-brown medium to fine SAND
		12 8	4		27.0			
		6						
		11 12	\$7 10		27.0 28.5	25.9		
		50				28.0 24.9	-	
		 				24.9 29.0	==	No Recovery - possible Glacial Till or Decomposed Bedrock
30 -								Refusal at 29.0 ft.
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35 -						-		
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								SORING NO. SK-B-10

ASA	. GLA	ALDRICH, STONBURY NECTICUT	INC.	TES'	т вс	RING REPORT	BORING NO. SK-MW-11
PROJECT CLIENT CONTRACT	PRATT	NCE WELTI	Y AIRCRAF	7	NG PROGRA	M EAST HARTFORD, CONNECTICUT	FILE NO. 90358-40 SHEET NO. 1 of 1 LOCATION N 146,081
	ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES	E 185,100
TYPE INSIDE D HAMMER W HAMMER F.		IN) LB) IN)	HSA 3-3/4 	ss 1-3/8 140 30	 -	RIG TYPE MOBIL 853 BIT TYPE DRILL MUD OTHER SK-MW-11	ELEVATION 48.1 SK-MW-11 DATUM MDC/NGVD START 7 October 1991 FINISH 7 October 1991 DRILLER K. Christiana H & A REP S. Gleason
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NO.& REC. (IN)	SAMPLE DEPTH (FT)	ELEV./ DEPTH (FT)	VISUAL DESCRIPTION	AND REMARKS
- 0 -						Silty fine SAND	-FILL-
		4	S1 20	3.0	46.6 1.5	Organic SILT	-ALLUVIUH-
		4			45.1 3.0		ACCOSTON
- 5		11 10 9 11	\$2 21	5.0 7.0		Medium to fine SANO	
- 10 -		6 7 7 6 5 8 7	\$4 24	10.0 12.0 12.0 14.0			-STREAM TERRACE DEPOSITS-
- 15 -		3 3 5 4 1 4 3 3	\$5 24 \$6 12	17.0 17.0 19.0	33.1 15.0	Varved CLAY	GLACIOLACUSTRINE-
- 20 -					29.1 19.0	Bottom of Exploration	at 19.0 ft.
- 25 -		WATER LE	VEL DATA	1_1		SAMPLE IDENTIFICATION	SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEF BOTTOM OF CASING		WATER	O PEN END ROD OVERBUR	DEN (LIN FT) 19.0 RED (LIN FT)
10/7/91			15.0	19.0	6.2	S SPLIT SPOON BORING	

							3/2-1110
AS)	■ GLA	ALDRICH, STONBURY NECTICUT	INC.	TES	T BO	RING REPOR	BORING NO. BE-MW-12
PROJECT CLIENT CONTRACT		& WHITNE	Y AIRCRAF	T .	NG PROGRA	M EAST HARTFORD, CONNECTIO	SHEET NO. 1 of 1 LOCATION N 146,773
	ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROC	
TYPE INSIDE D HAMMER W HAMMER F		IN) LB)	HSA 3-3/4 	SS 1-3/8 140 30	 -	RIG TYPE CME75 BIT TYPE DRILL MUD OTHER SK-MW-12	ELEVATION 46.3 SK-MW-12 DATUM MDC/NGVD START 2 October 1991 FINISH 2 October 1991 DRILLER B. Ursin H & A REP C. Osgood
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NO.4 REC. (IN)	SAMPLE DEPTH (FT)	ELEV./ DEPTH (FT)	VISUAL DESC	RIPTION AND REMARKS
- 0 -					46.1		-ASPHALT- /
		5	S1	1.0	0.2 45.3		-FILL-
•		3 3	19	3.0	1.0		
	<u> </u>			1		Medium to fine SAND	
- 5 -					1		
		4	S2 24	5.0 7.0		·	
		4		5.0 7.0			
		6		<u> </u>	ł		-STREAM TERRACE
]]			DEPOSITS-
- 10 -	ļ				<i>!</i>	; ;	
, ,		3	S3 24	10.0			
j		3] [
	·	4		24 —	! i		
					31.8		
- 15				224 - 25 - 3	14.5	Laminated silty CLAY	
		1	\$4 18	15.0		Caminated Sittly CEAT	
		2	: -				
		1	S 5	17.0			
		2	6	19.0			CLACTOL AMIOTOTUM
		1					-GLACIOLACUSTRINE-
		1	s6	19.0			
- 20 -		WOH 1	4	21.0			
		WOH			25.3		
					21.0	Bottom of Explo	ration at 21.0 ft.
- 25 -		115 772 1 -	Æ! 04=-			SANDLE INCUTTIFICATION	SLIMMARY
		WATER LE		TH (FT)	0:	SAMPLE IDENTIFICATION O OPEN END ROD	
DATE	TIME	ELAPSED TIME (HR)	BOTTOM	BOTTOM	WATER		OVERBURDEN (LIN FT) 21.0 ROCK CORED (LIN FT)
10/3/01			OF_CASING			U UNDISTURBED SAMPLE	SAMPLES 6s
10/2/91 10/2/91	1500 1630		14.5 14.5	14.5 14.5	6.3 6.1	s SPLIT SPOON	
10/3/91	0800		14.5	14.5	6.1		BORING NO. SK-MW-12

GEOLOGIC BORING LOG

Page 1 of 1

Project: South Klondike Monitoring Well Install. LEA Comm No: 68TR672					Start Date 8/27/96	Boring ID	•			
Client: P	ratt & Whit	ney			End Date	SK-MW-1	<u>a</u>			
Location:	East Hart			laa	8/27/96		3			
Drilling Co Drilling Mo Sampling Mo Groundwar Depth: 8 Depth:	ethod: H Method: ter Observa	ollow s Split sp	on. Drilling l tem auger boon Hours Hours	파. 프로	Logged By: F. F Drilling Foreman: Drill Rig: D120 Surface Elevation: Northing: Easting:	,				
Берин		ple Inform			Sample Description		PID/FID (ppm)			
Elevation/ Depth	Sample No.	Recovery (१)	Blows /6		Color, Prim. Grain Size, Sec. Grain Sizes, Moist, Sort, Spher, Angul, Sed Struct, Density, Cohesive					
÷ • • •	1017691	25	10.11,10,9), some medium Sand, little c oderately dense	oarse Gravel,	0.0			
+ +	1017692	0	14,15,21,23	No recovery						
‡ + +	1017693	20	17, 19. 29, 27	Pink, medium S	AND, some fine Sand, loose,	moist, stratified	0.0			
† † † †	1017694	,00	27,24,37.35	As above, fine	SAND lense		0.0			
8 -	7 i01765*	70	20,5.5,7	Grey to dark brogleyed	own, fine SAND, loose, wet,	stratified,	0.0			
+	1017696	50	4.5.2,5	Pink to olive bro coarse Sand, lo	own, medium SAND, some fir ose, wet	ne Sand, trace	0.0			
12	1017697	80	7,10,9,10	Yellowish brown Sand, loose, we	n to yellowish red, medium S.	AND, little fine	0.0			
+ + + + + + + + + + + + + + + + + + + +	1017698		3.2.2.3	Grey, SILT, little at 14.2', 14.9',	e Clay, wet, loose; red fine SA 15.6'	AND lenses	0,0			
16 + + +	 - 			Bottom of borin	g 16'					
20										
Comments:										

LEA Com Client: P Location: Drilling Co Drilling M Sampling	ratt & Whitney East Hartford, Connecticut ontractor: Environ. Drilling Inc. ethod: Hollow stem auger Method: Split spoon ter Observations:		Start Date: 8/27/96 End Date 8/27/96 Logged By: F Drilling Forem: Drill Rig: D1 Surface Elevati Northing: Easting:	an: Dwa 20	Boring ID SK-MW-19 ayne
Elev./ Depth (Ft).	Well Construction Diagram	Siz	Sample Description r, Prim. Grain Size, Sec es, Moist, Sort, Spher, A Struct, Density, Cohesi	. Grain Angul,	COVER TYPE: Stick up
		Pink, fin little coa moderat No record Pink, me loose, m	e SAND, some medium irse Gravel, dry, loose t ely dense	Sand, Sand,	BACKFILL Type: N/A Top Depth: Bottom Depth: CASING Diameter: 2" Length: 6.5' Stick Up: 2.9' SEAL Type: Bentonite Chips Quantity: .5 bags Top Depth: 2' Bottom Depth: 3' SCREEN Type: Schedule 40 PVC Diameter: 2" Slot Size: 0.010" Top Depth: 3.5' Bottom Depth: 13.5' FILTER PACK Type: #0 Sand Top Depth: 3' Bottom Depth: 16'
Comments	:	<u> </u>			

LEA Com		TR672 ney	onitoring We	II Install.	Start Date 8/27/96 End Date 8/27/96	Boring II SK-MW-2	
Drilling Co Drilling M Sampling I Groundwa Depth: 7	ontractor: ethod: H Method: ter Observa	Envir Iollow st Split sp	on. Drilling tem auger boon Hours		Logged By: F. F Drilling Foreman: Drill Rig: D120 Surface Elevation: Northing:	, ,	
Depth:		At:	Hours	-	Easting:		· · · ·
Elevation/ Depth	Sample No.						PID/FID
+ - 0	1017682	50	3,6,6.4	Top 6": Dark b	rown to strong brown, fine Sost, fibric Organic Material; Bo	AND, trace(-)	0.0
+	1017683	60	5,7.7.10	Yellowish red,	fine SAND, trace Silt, loose, noist,	noist	0.0
4	1017684	60	4.7.10.15	· · · · · · · · · · · · · · · · · · ·	lense at 5.2 (0.1' thick)		0.0
† † †	1017685	10C	7 10,13.10		pove; Bottom 0.4': Yellowish ne Sand, loose, moist to wet,		0.0
+8	1017686 1017689	85	10.8.7.5	dense, moist to	ne SAND, little Silt, loose to rowet; Bottom 1': Reddish yelle Sand, loose, wet, stratified		0.0
†	1017687	70	3, 3. 4. 4	As above			0.0
+ 12	1017688	75	7,9,9,5	brown, medium	ve; Bottom 6": Pale yellowish SAND, some fine Sand, little nganese staining		0.0
 	1017690	100	4,4.5.5		ve; Bottom 1': Grey, SILT, sa red fine SAND lenses at 15.4		0.0
+16				Bottom of borin	ng at 16'		
20							
<u> </u>							

LEA Com	ratt & Whitney	nstall.	Start Date: 8/27/96 End Date 8/27/96	1	Soring ID (-MW-21
Drilling Co Drilling M Sampling	ontractor: Environ. Drilling Inc. ethod: Hollow stem auger Method: Split spoon ter Observations:		Logged By: F Drilling Forems Drill Rig: D1 Surface Elevati Northing: Easting:	an: Dwayno 20	е
Elev./ Depth (Ft).	Well Construction Diagram	Color, Prin	nple Description n. Grain Size, Sec. oist, Sort, Spher, A t, Density, Cohesi	Grain T	COVER YPE: Stick up
		Top 6": Stron Silt, loose to vorganic Matter yellow, fine Sand, loose, ras above Yellowish red some fine San mottles As above, pos 7.1', wet at 7 Pinkish grey to SAND, little fine fine Sand, loose, rate fine Sand, stratified Top 1.5': As a yellowish red, coarse Sand, stratified Top 1.3': As a fine stratified	g brown, fine SAlvery loose, moist, er; Bottom 6": Pin AND, trace(+) moist, stratified to pink, medium ad, loose, moist, sesible manganese 5.5" o yellowish red, me Sand, loose, we medium SAND, loose, wet, mottle above; Bottom 0. medium SAND, loose, wet, mottle above; Bottom 0. my, moist to wet, series and	ND, trace fibric kish edium SAND, stratified, staining at Staining at Staining at Staining at Stratified Fi: some es, some es, stratified Fi: Grey, stratified Fi: Staining at St	BACKFILL Type: N/A Top Depth: CASING Diameter: 2" Length: 6.5' tick Up: 3.0' SEAL Type: Bentonite Chips Duantity: .5 bags Top Depth: 2' Lottom Depth: 3' SCREEN Type: Schedule 40 PVC Diameter: 2" Lot Size: 0.010" Top Depth: 3.5' Lottom Depth: 13.5' Lottom Depth: 13.5' Lottom Depth: 3' Lottom Depth: 3' Lottom Depth: 3' Lottom Depth: 3' Lottom Depth: 3' Lottom Depth: 3' Lottom Depth: 3' Lottom Depth: 3' Lottom Depth: 3' Lottom Depth: 3' Lottom Depth: 13.5' Lottom Depth: 3' Lottom Depth: 3' Lottom Depth: 13.5' Lottom Depth: 13.5' Lottom Depth: 13.5' Lottom Depth: 13.5' Lottom Depth: 13.5' Lottom Depth: 13.5' Lottom Depth: 13.5' Lottom Depth: 13.5' Lottom Depth: 13.5'
Comments	:	<u> </u>		1	

Project: LEA Com		dike Mo TR672	nitoring We	il Install.	Start Date 8/27/96	Boring ID			
Client: P	ratt & Whit	ney	nnactious		End Date	SK-MW-2	22		
	ontractor: ethod: H Method: ter Observat	Envir ollow s Split sp tions:	on. Drilling tem auger		Drilling Foreman: Drill Rig: D120 Surface Elevation	Postma Dwayne	- -		
Depth: 7 Depth:		At: 0 At:	Hours Hours		Northing: Easting:				
Elevation/ Depth	Sample No.	Recovery	Blows		Sample Description Color, Prim. Grain Size, Sec. Grain Sizes, Moist, Sort, Spher, Angul, Sed Struct, Density, Cohesive				
+0	1017667	50	3, 4, 6, 8	Top 6": Strong	brown, fine SAND and SILT,	loose, moist,	0.0		
+				fibric Organic M	flatter, roots; Bottom 6": Brov e(-) medium Sand, loose, mo	vnish pink,			
+++++++++++++++++++++++++++++++++++++++	1017668	70	9,11.17,17	As above, SILT	lense at 3.2' (0.1' thick)		0.0		
+4 +	1017669	80	7,12,14,16		own, fine SAND, little medium se, mottles at tip, stratified	n Sand, moist,	0.0		
+ <u>z</u>	10:7670 7	70	10,13,14,14	moderately den brown, medium	n yellow, medium SAND, with se, moist, mottles; Bottom 1' SAND, with fine Sand, mode	· Greyish	0.0		
+ε † †	1017671	85	3,4,7,6	wet, oil staining As above, oil st		/	0.0		
† † †	1017672		5.5,6,7	As above			0.0		
12	1017673		5.3.12.12	As above, iron	staining at 13.1'		0.0		
† †	1017674	100	0.0.3.5	Grey, SILT, little 14.7'	e Clay, wet, stratified, fat CL	AY lense at	0.0		
+16 + + + +				Bottom of borin	g at 16'				
20									
Comments	:	<u>. I </u>	<u> </u>				1		

1017651 92 5.15.15,16 10": Topsoil; 12": Reddish brown, fine SAND, dry to slightly moist, loose to slightly dense 1.6	LEA Com	m No: 68 ratt & Whit	TR672 tney	onitoring We	il Install.	Start Date 8/26/96 End Date 8/26/96	Boring II SK-MW-2	
Sample Information Sample Description Color, Prim. Grain Size, Sec. Grain Sizes, Moist, Sort, Spher, Angul, Sed Struct, Density, Cohesive Color, Prim. Grain Size, Sec. Grain Sizes, Moist, Sort, Spher, Angul, Sed Struct, Density, Cohesive Color, Prim. Grain Size, Sec. Grain Sizes, Moist, Sort, Spher, Angul, Sed Struct, Density, Cohesive Color, Prim. Grain Size, Sec. Grain Sizes, Moist, Sort, Spher, Angul, Sed Struct, Density, Cohesive Color, Prim. Grain Size, Sec. Grain Sizes, Moist, Sort, Spher, Angul, Sed Struct, Density, Cohesive Cohesiv	Drilling M Sampling M Groundwa Depth: 4	ethod: H Method: ter Observa .5	lollow s Split sp tions: At: 0	tem auger boon Hours		Drilling Forema Drill Rig: D12 Surface Elevatio Northing:	n: Dwayne 20	
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1017652 83 17,28,29,27 Reddish brown, fine SAND, with Silt, moist to wet, slightly dense 1017653 100 7,18,13,15 As above, wet, slightly dense 9.5			<u> </u>			r, Prim. Grain Size, Sec. Grain ist, Sort, Spher, Angul, Sed S		PID/FID (ppm)
1017652 83 17,28,29,27 Reddish brown, fine SAND, with Silt, moist to wet, slightly dense 1017653 100 7,18,13,15 As above, wet, slightly dense 9.5	+							
1017653 100 7,18,13,15 As above, wet, slightly dense 9.5	T ⁰	1017651	92	5, 15, 15, 16			ND, dry to	1.6
1017654 100 8.11.11.12 Reddish brown, fine to coarse SAND, with Silt, wet loose 5.4	†	1017652	83	17,20,29,27		, fine SAND, with Silt, mois	t to wet, slightly	10.4
1017655 100 2.3.6.5 As above 3.1 1017656 42 3.2.2.7 Reddish brown, fine to coarse(+) SAND and SILT, wet, loose, trace(-) fine Gravel 0.8 1017657 100 5.7.6.7 As above 0.8 1017658 100 12": Olive grey, CLAY, trace Silt, trace fine Sand, dense, wet wet 16 Bottom of boring at 16'	+4 + <u>Ş</u>	7 1017653	100	7,10,13.15	As above, wet,	, slightly dense		9.5
1017656 42 3.2.2.7 Reddish brown, fine to coarse(+) SAND and SILT, wet, loose, trace(-) fine Gravel 1017657 100 5.7.6.7 As above 1017658 100 12": Olive grey, CLAY, trace Silt, trace fine Sand, dense, wet 16 Bottom of boring at 16'	†	1017654	100	8,11,11,12	Reddish brown	, fine to coarse SAND, with	Silt, wet loose	5.4
1017657 100 5.7.6. As above 0.8 1017658 100 12": Olive grey, CLAY, trace Silt, trace fine Sand, dense, wet Bottom of boring at 16'	6	1017655	100	2,3,6,5	As above			3.1
1017657 100 55. As above 1017658 100 12": Olive grey, CLAY, trace Silt, trace fine Sand, dense, wet Bottom of boring at 16'	+	1017656	42	3.2,2.7			nd SILT, wet,	2.4
Bottom of boring at 16'	12	1017657	100	5,7.6,7	As above			0.8
Bottom of boring at 16'		1017658	100		_	, CLAY, trace Silt, trace fine	e Sand, dense,	
	+ 16 + + +				Bottom of borin	ng at 16'		
Comments:	+ 20							
Comments:	† † †							
	Comments	:						<u> </u>

LEA Come Client: P Location: Drilling Con Drilling M Sampling I Groundwa	ratt & Whitney East Hartford, Connecticut ontractor: Environ. Drilling II ethod: Hollow stem auger Method: Split spoon fer Observations:		Drilling Forema Drill Rig: D1 Surface Elevati	20	Boring ID SK-MW-23 ayne
Depth: Depth:	4.5 At: 0 Hours $\frac{\square}{4}$		Northing: Easting:		
Elev./ Depth (Ft).	Well Construction Diagram	Sizes	Sample Description Prim. Grain Size, Sec. Moist, Sort, Spher, A Struct, Density, Cohesi	Grain	COVER TYPE: Stick Up
÷ 0			soil; 12": Reddish bro y to slightly moist, loc ense		BACKFILL Type: N/A Top Depth: Bottom Depth:
+ + + + + + + + + + + + + + + + + + + +			prown, fine SAND, wit wet, slightly dense	h Silt,	CASING Diameter: 2"
- 4 - 5 - 1		As above	, wet, slightly dense		Length: 6' Stick Up: 3.0'
-8			orown, fine to coarse s wet, loose	SAND,	SEAL Type: Bentonite Chips
		As above			Quantity: .5 chips Top Depth: 2'
+			prown, fine to coarse(wet, loose, trace(-) f		Bottom Depth: 2.5' SCREEN
+ 12 + + +		As above			Type: Schedule 40 PVC Diameter: 2"
+			e grey, CLAY, trace S , dense, wet	ilt, trace	Slot Size: 0.010" Top Depth: 3'
+ 16 + +		Bottom o	f boring at 16'		Bottom Depth: 13'
					FILTER PACK Type: #0 Sand
					Top Depth: 2.5'
20 					Bottom Depth: 14'
Comments	•				
Comments	•				

Project: LEA Com Client: F Location:	m No: 68 Pratt & Whit	TR672 tney	onitoring We	il Install.	Start Date 8/26/96 End Date 8/26/96	Boring II	
Drilling C Drilling M Sampling	ontractor: (ethod: + Method: ater Observa	Envir Iollow st Split sp	on. Drilling tem auger		\	Klapheke i: Dwayne 0	-
Depth:		At:	Hours	고 - -	Easting:		
Elevation/ Depth	Sample No.	Recovery	Blows 76"	Color Moi	Sample Description , Prim. Grain Size, Sec. Grain st, Sort, Spher, Angul, Sed Str Density, Cohesive	Sizes, ruct,	PID/FID (ppm)
+	1017659	33	4,5.5,8	6": Topsoil; 2":	: Dark brown, fine SAND and	d SILT, dry, loose	
†	1017660	83	3.4.4.5	Light greyish br moist, loose	rown, fine(+) to coarse SAN	D, with Silt,	4.5
4	1017661	58	4,4,2,5	As above, mois	t to wet		14.3
<u> </u>	1017662	75	5.10.12,14	As above, wet			13.0
3	1017663	79	3.3.4.6	2": As above; 1 SAND, with Silv	17": Light grey brown, fine(t, trace(-) fine Gravel, wet, s	+) to coarse lightly dense	12.3
12	1017664	100	6.7.7.9	As above			21.1
12	1017665	100	9.9.12.15	As above, dark	reddish brown		10.2
+	1017666	100	11.7.8.14	SAND, with fine	10": Dark reddish brown, fi e Gravel, trace Silt, wet, loo ce Silt, trace fine Sand, wet,	se; 2": Olive	43.2
16				Bottom of borin	ng at 16'		
Comments	<u> </u> 						

TECHNICAL MEMORANDA

SUMMARY SITE INVESTIGATION AND REMEDIATION REPORT AIRPORT/KLONDIKE AREA AT PRATT & WHITNEY EAST HARTFORD, CONNECTICUT EPA ID No. CTD990672081

Prepared for:

PRATT & WHITNEY
400 Main Street
East Hartford, Connecticut 06108

Prepared by:

LOUREIRO ENGINEERING ASSOCIATES
100 Northwest Drive
Plainville, Connecticut 06062

LEA Comm. No. 68V8124

TECHNICAL MEMORANDUM 2 WATER-LEVEL MEASUREMENTS AND SITE-SURVEY DATA

SUMMARY
SITE INVESTIGATION AND REMEDIATION REPORT
AIRPORT/KLONDIKE AREA
AT
PRATT & WHITNEY
EAST HARTFORD, CONNECTICUT
EPA ID No. CTD990672081

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Acronyms

DEP State of Connecticut Department of Environmental Protection

DPH State of Connecticut Department of Public Health

H&A Haley & Aldrich, Inc.

LEA Loureiro Engineering Associates, P.C.

M&E Metcalf & Eddy, Inc.

QA/QC Quality Assurance/Quality Control
PPE Personal Protective Equipment
SOP Standard Operating Procedure

TM Technical Memoranda

TOC Top Of Casing TOR Top Of Riser

1. INTRODUCTION

1.1 Purpose and Objective

This Technical Memoranda (TM) presents the methodology and results of water-level measurements from groundwater monitoring wells and piezometers in the Airport/Klondike Area of the Pratt & Whitney (P&W) facility located at 400 Main Street (Main Street facility) in the Town of East Hartford, Connecticut. Water-levels were measured and an instrument survey was performed as part of the investigation activities completed for the Airport/Klondike Area.

The water-level measurements were used to provide information on the direction of groundwater flow across the Site and to evaluate seasonal variations in the water-table or piezometric surface elevation and flow direction. The instrument survey was performed to obtain the horizontal locations and vertical reference elevations of the sampling locations utilized in the site-wide groundwater investigation. These data are presented on a site-wide basis because of the nature of groundwater movement and the distribution of monitoring wells across the site.

1.2 Background

The Airport/Klondike Area is located on the eastern portion of the P&W Main Street facility on the east side of the main plant, north of Brewer Street and south of Silver Lane. The Airport/Klondike Area consists of four study areas that include the North and South Airport Areas and the North and South Klondike Areas. Previous investigations at the Site performed from 1990 through 1993 resulted in the installation and sampling of groundwater monitoring wells and temporary wellpoints throughout the Airport/Klondike Area. For a more detailed account of the monitoring wells refer to Technical Memorandum 1, Monitoring Installation and Development and Soil Sampling.

In the North Airport Area, wells NA-MW-01 through NA-MW-04 were installed in October 1991 during the Site-wide Environmental Monitoring Program at the Main Street facility by Haley & Aldrich, Inc. (H&A). In the North Airport Area, piezometers NA-PZ-01 through NA-PZ-12 were installed in November 1991 during the Site-wide Environmental Monitoring Program.

In the North Klondike Area, wells NK-MW-01 through NK-MW-05 were installed in February 1990 during the Preliminary Reconnaissance Survey of the Airport/Klondike Area by Westinghouse Environmental and Geotechnical Services, Inc. (Westinghouse). Wells NK-MW-06 and NK-MW-07 were installed in October 1991 during the Site-wide Environmental Monitoring Program. Wells NK-MW-08 through NK-MW-10 were installed in October 1992

during the Environmental Assessment of the Former PCB Storage Building by H&A. Wells NK-MW-12 through NK-MW-17 were installed in about April 1993 during the Klondike Area Site Investigation by Metcalf & Eddy, Inc. (M&E). Two additional monitoring wells, NK-MW-18 and NK-MW-19, were installed in July 1996 by Loureiro Engineering Associates, P.C. (LEA) as part of the most recent investigation activities.

In the South Klondike Area, wells SK-MW-01 through SK-MW-08S and SK-MW-8D were installed in February 1990 during the Preliminary Reconnaissance Survey. Wells SK-MW-09 through SK-MW-13 were installed in October 1991 during the Site-wide Environmental Monitoring Program. Wells SK-MW-14I, SK-MW-15I, and SK-MW-16 were installed in about April 1993 during the Klondike Area Site Investigation. Six additional monitoring wells, SK-MW-18 through SK-MW-24, were installed in August 1996 as part of the most recent investigation activities.

In the South Airport Area, monitoring wells SA-MW-01 and SA-MW-02I were installed in February 1990 during the Preliminary Reconnaissance Survey. Wells SA-MW-03 through SA-MW-05S and SA-MW-05I were installed in October 1991 during the Site-wide Environmental Monitoring Program. In the South Airport Area, piezometers SA-PZ-01 and SA-PZ-02 were installed in November 1991 during the Site-wide Environmental Monitoring Program.

1.3 Scope

This TM presents the water-level measurements conducted from March 1990 through April 1998 in the Airport/Klondike Area of the Main Street facility. The results of the water-level measurements completed in March 1990, September 1996, June 1997, November 1997, and April 1998 are presented in this TM. These water-level measurements were typically performed as part of site-wide groundwater sampling events. For a more detailed account of these groundwater sampling events refer to Technical Memorandum 3, Groundwater Sampling and Quality.

These data include historical water-level measurements which do not include all of the current monitoring wells. In some cases, the water-level measurements do not even include all monitoring wells available at that time. In addition, this TM does not address the isolated water-level measurements conducted during other site activities such as well development, well sampling, or aquifer testing. The water-level measurements covered are included to provide a site-wide view of groundwater movement.

The horizontal and vertical coordinates of sampling locations were determined by performing an instrument survey of monitoring wells and soil borings. All of the monitoring wells and some of

the soil boring locations were surveyed. In cases where soil boring locations were not surveyed, the horizontal locations were established by measuring from a known reference point (i.e., building corner or existing soil boring) with a tape measure.

2. METHODOLOGY

This section presents the methods and techniques used for water-level measurements from groundwater monitoring wells and piezometers and for the instrument survey.

2.1 Manual Measurement of Water Levels

Measurement of water levels on a site-wide basis must be performed rapidly to minimize the errors resulting from time-dependent effects, such as recharge from precipitation. The task of measuring water levels was typically performed by LEA personnel in a single day.

For the most recent data, manual water-level measurements were made by LEA personnel in general accordance with the techniques described in the LEA Standard Operating Procedure (SOP) Liquid Sample Collection and Field Analysis. Depth to water was measured to the nearest 0.01 foot using an electronic water-level indicator. The depth to water measurements were made relative to the surveyed reference mark for each water-level measurement point (i.e., monitoring well, piezometer, etc.).

Historical water level measurements are also presented in this TM. These data are presented "asis". Quality assurance and quality control information are not available for the historical water-level measurement data. Also, information on equipment decontamination and waste management practices is typically not presented with historical data reports. The discussions of equipment decontamination and waste management practices presented below are not intended to include reference to historical practices.

2.2 Surveying

Ground surface, top-of-casing (TOC), and top-of-riser (TOR) reference elevations and locations for all water-level measurement points were surveyed to a vertical accuracy of 0.01 feet. Water-level elevations were calculated by subtracting the depth to water from the surveyed reference elevation. The ground surface, TOC, and TOR reference elevations, along with the depth to the top and bottem of the screened interval, for each monitoring well and piezometer are presented in Table 1.

2.3 Equipment Decontamination

Before initiating water-level measurements and between locations, the electronic water-level indicator was decontaminated using a dilute methanol/water solution rinse followed by a rinse

with deionized water. Each rinsing solution was applied by wiping the measuring tape with a saturated, disposable paper towel. The entire decontamination process was performed continuously as the tape was withdrawn from the monitoring well by passing the tape through the towel saturated with the methanol/water solution and then through the towel saturated with deionized water.

2.4 Waste Management

The task of measuring water levels generated small quantities of waste, generally consisting of used surgical gloves and the paper towels used to wipe the water-level indicator. Theses wastes were bagged with other personal protective equipment (PPE) in accordance with LEA SOPs.

2.5 Health and Safety

LEA field personnel conducted the field activities in accordance with the LEA Site Health and Safety Plan that was prepared for all of the investigation activities conducted on the Site. In general, wells were sampled in modified Level D PPE consisting of safety glasses and surgical or nitrile gloves.

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3. RESULTS

3.1 Water-Level Measurement

The results of the water-level measurements completed in March 1990, November 1991, September 1996, June 1997, November 1997, and April 1998 are presented in Tables 2 through 7. The location identifiers presented in Tables 2 and 3 includes some that have been modified from those originally used to conform to the location identification protocol currently used at the site.

3.2 Survey Data for Elevations of Groundwater Monitoring Wells

The survey data consisting of easting and northings for monitoring wells, piezometers, and stream gauging locations is listed in Table 1. The data shown in Table 1 includes horizontal location data relative to the Connecticut State Plane Coordinate System.

3.3 Horizontal Groundwater Flow

The horizontal groundwater flow directions within the upper portion of the aquifer in the Airport/Klondike Area for four events, September 1996, June 1997, November 1997, and April 1998, have been inferred from the water-table elevation measurements presented in Table 4 through 7. These data have been used to construct water-table contour maps and are presented as Drawings 1 through 4. These four events were selected for mapping since they included the most comprehensive listing of water-level measurement points.

These data indicate that groundwater flow in the upper aquifer is typically toward the southwest, generally toward the Connecticut River. Local groundwater flow directions are generally consistent with the expected regional groundwater flow direction, but are locally influenced to varying degrees by the presence of Pewterpot Brook and the drainage system beneath Rentschler Airport. As discussed in Section 3.6. Pewterpot Brook appears to be generally a gaining stream, receiving groundwater from the upper aquifer over the reach of the stream where piezometers have been installed.

In the November 1997 water-table contour map, the water-table surface appears to be influenced by relatively high groundwater elevations in the North Airport Area near monitoring well NA-MW-03. This area has historically had an elevated water level and the data from this monitoring well is not typically used in constructing water-table contour maps because the water level is typically above the screened interval of the well.

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Aside from the somewhat anomalous water-table contour elevations for November 1997, the groundwater elevation contours for the Airport/Klondike Area appear to be temporally uniform. Seasonal variations are typically manifested only in the absolute water-table elevations, however, the relative elevations remain relatively consistent.

There is insufficient data to review groundwater flow directions in the lower portion of the upper aquifer or in the glaciolacustrine deposits. A more detailed discussion on the site-specific geologic and hydrogeologic conditions encountered and of regional geologic and hydrogeologic conditions as derived from available published information is included in the body of this report.

3.4 Horizontal Groundwater Hydraulic Gradients

The horizontal groundwater gradient is a measure of the driving force behind horizontal groundwater flow. The horizontal hydraulic gradient is the slope, in head loss per unit distance, of the groundwater surface as measured in wells tapping the same aquifer and screened in roughly the same interval. Calculations from the available data indicate that the horizontal hydraulic gradient does not temporally vary significantly in absolute or relative (to the different areas) magnitude.

Based on the available water-level elevation data, horizontal hydraulic groundwater gradients in the eastern Klondike Area range from approximately 0.0064 feet/foot to 0.0075 feet/foot. In the Airport Area, horizontal hydraulic groundwater gradients range from approximately 0.0023 feet/foot to 0.0034 feet/foot.

3.5 Vertical Groundwater Hydraulic Gradients

Vertical groundwater hydraulic gradients measure the driving force behind vertical groundwater flow within an aquifer or between aquifers. Vertical hydraulic gradients in the Airport/ Klondike Area have been calculated from groundwater elevation measurements in monitoring well clusters tapping different portions of the upper aquifer. Monitoring well clusters SK-MW-08S/D, in the South Klondike Area and SA-MW-05S/D in the South Airport Area may be used to estimate vertical hydraulic gradients in the upper aquifer.

Vertical hydraulic gradients calculated from water-level measurements made in 1997 indicate that there is a general downward hydraulic gradient to the groundwater in the upper aquifer in the South Airport and South Klondike Areas. Although no data exist for the North Airport and North Klondike Areas, it is reasonable to assume that the same general downward vertical hydraulic gradients exist as observed in the South Airport and South Klondike Areas.

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Vertical hydraulic gradients calculated from the March 1990 data indicate a vertical hydraulic gradient of approximately 0.011 feet/foot downward at monitoring wells SK-MW-08S/D. Vertical hydraulic gradients calculated from the November 1991 data indicate a vertical hydraulic gradient of approximately 0.038 feet/foot downward at monitoring wells SK-MW-08S/D. Vertical hydraulic gradients calculated from the June 1997 data indicate a vertical hydraulic gradient of approximately 0.015 feet/foot downward at monitoring wells SK-MW-08S/D and 0.041 feet/foot downward at monitoring wells SA-MW-05S/I. Vertical hydraulic gradients calculated from the November 1997 data indicate a vertical hydraulic gradient of approximately 0.018 feet/foot downward at monitoring wells SK-MW-08S/D and 0.039 feet/foot downward at monitoring wells SK-MW-08S/D and 0.039 feet/foot downward at monitoring wells SA-MW-05S/I.

3.6 Surface Water/Groundwater Interaction

Surface water groundwater interactions can be estimated by measuring the difference in water levels between the upper aquifer and the surface water body. Three surface water piezometers (SK-PZ-01, SK-PZ-02, and SK-PZ-03) have been installed in Pewterpot Brook in the South Klondike Area. These piezometers begin in the area just west of the Virgin Product Storage Area and continue south to approximately the southeast corner of the airport. These three piezometers allow simultaneous measurement of the stage of Pewterpot Brook and the water table elevation at the same location, and therefore, an estimation of the surface water/groundwater interaction in that area.

Measurements of the stage of the brook and water-table elevation have been made during the water level gauging events of 1997. Data for the June 1997 and November 1997 events is presented in Tables 5 and 6. These data have been used to calculate the apparent direction of groundwater flow between the brook and the upper aquifer.

During both the June 1997 and November 1997 events, the water-level measurements indicate that Pewterpot Brook is a gaining stream in the reach between the Virgin Product Storage Area and SK-PZ-02. That is, the elevation of the water table is higher than the stage of the stream and groundwater would tend to flow from the aquifer into the stream. During the June 1997 event, the data collected from piezometer SK-PZ-03 indicated that the stream was a losing stream in that portion of the stream, but was a gaining stream during the November 1997 gauging event.

TABLES

Table 1 Monitoring Well Construction Data Summary Airport and Klondike Areas, Pratt & Whitney, East hartford, Connecticut

Location Identifier	Easting	Northing	Reference Elevation (Feet)	Top of Casing Elevation (Feet)	Depth to Top of Screen (Feet)	Depth to Bottom of Screen (Feet)
NA-MW-01	183865.1	150087.8	46.09	46.31	5.30	15.30
NA-MW-02	183169.3	147923.8	43.13	43.35	4.80	14.80
NA-MW-03	184182.5	144746.6	43.06	43.30	4.50	14.50
NA-MW-04	182454.9	146144.6	42.49	42.78	10.30	20.30
NA-MW-05	184855.6	148308.3	47.91		2.25	11.25
NA-MW-06	184617.2	149208.1	47.48		2.00	11.00
NA-MW-07	184335.3	147216.0	48.34		2.25	11.25
NA-MW-19	183073.4	147881.3	42.96			
NA-PZ-01	183755.1	147369.5	42.72	44.11	5.00	10.00
NA-PZ-02	183755.1	147369.5	43.80	44.11	5.00	10.00
NA-PZ-03	182515.6	147279.1	43.19	43.49	5.00	10.00
NA-PZ-04	182888.3	146907.3	41.45	41.66	5.00	10.00
NA-PZ-05	183159.3	146629.3	41.32	41.59	5.00	10.00
NA-PZ-06	183622.3	146232.5	40.80	41.02	5.00	10.00
NA-PZ-07	183979.3	145976.8	43.67	43.94	5.00	10.00
NA-PZ-08	182032.9	146148.7	40.74	40.89	5.00	10.00
NA-PZ-09	182771.4	145889.8	40.48	40.76	5.00	10.00
NA-PZ-10	183206.1	145538.2	43.35	43.63	5.00	10.00
NA-PZ-11	183627.1	145197.7	42.19	42.48	5,00	10.00
NA-PZ-12	184148.7	144778.3	43.13			
NK-MW-01	186195.2	148084.0	55.43	55.76	7.00	12.00
NK-MW-02	185325.7	147796.5	48.40	49.64	5.00	10,00
NK-MW-03	185362.9	148327.7	50.94	51.44	7.00	12.00
NK-MW-04	185331.2	148048.2	46.11	46.69	7,00	12.00
NK-MW-05	184855.6	148308.3	46.65	47.70	4.00	9.00
NK-MW-06	184617.2	149208.1	50.57	50.76	4.00	11.50
NK-MW-07	184335.3	147216.0	47.60	47.78	5.00	12,50
NK-MW-08	184896.6	148429.1	50.96		4.00	11.00
NK-MW-09	184894.5	148385.6	50.43	50.60	4.00	11.00
NK-MW-10	184847.3	148392.2	49.78	49.90	3.50	10.50
NK-MW-11	184550.0	148365.0	46.75	46.75		
NK-MW-12	184223.3	147716.3	46.75		4.50	9.50

Table 1
Monitoring Well Construction Data Summary
Airport and Klondike Areas, Pratt & Whitney, East hartford, Connecticut

	<u> </u>		7.0			
Location			Reference	Top of Casing	Depth to Top of	Depth to Bottom
Identifier	Easting	Northing	Elevation	Elevation	Screen	of Screen
			(Feet)	(Feet)	(Feet)	(Feet)
NK-MW-13	184459.3	147714.0	50.59		5.00	15.00
NK-MW-14S	184887.7	147770.8	49.32		5.00	10.00
NK-MW-15S	186014.8	147387.9	57.49		2.00	12.00
NK-MW-16	185369.3	148354.0	51.44		3,50	13.50
NK-MW-17	184560.7	148863.6	49.57		4.00	9.00
NK-MW-18	185358.2	148289.4	47.31		1.70	10.70
NK-MW-19	184560.9	148244.5	46.38		1.70	10.70
NK-PZ-01	185328.8	148368.0	46.85			
NK-PZ-02	185339.5	148319.6	46.77			
SA-MW-01	182912.2	144567.5	42.12	42.99	13.00	18.00
SA-MW-02I	181788.5	143840.1	37.04	37.78	15.00	25.00
SA-MW-03	182546.9	144407.3	40.36	40.48	10,00	20.00
SA-MW-04	181919.9	143583.9	38.13	38.31	7.50	17.50
SA-MW-05I	182358.5	143938.4	37.81	38.65	13.50	23.50
SA-MW-05S	182359.7	143932.9	38.07	38.48	4.50	14.50
SA-PZ-01	181881.2	145633.8	39.56	39.76	5.00	10.00
SA-PZ-02	182103.7	145507.9	40.00	40.27	5.00	10.00
SK-MW-01	185636.9	144814.9	50.45	51.22	8.00	13.00
SK-MW-02	185424.2	145840.4	<u>5</u> 0.18	51.30	9.00	19.00
SK-MW-03	185356.5	145553.5	49.70	49.91	6,00	16.00
SK-MW-()4	185636.9	145226.6	50.50	50.81	5.60	15.60
SK-MW-05	184770.0	145767.4	47.19	47.80	6.00	11.00
SK-MW-06	184740.7	146811.2	48.43	48,80	7,00	12.00
SK-MW-07	185172.4	147005,9	<u>5</u> 1.06	52.19	8,00	13.00
SK-MW-08D	184537.2	145559.5	45.02	45.21	49.00	59,00
SK-MW-08S	184542.3	145560.0	42.92	43.43	7.50	12.50
SK-MW-09	186692.4	146766.8	63.67	64.24	5.00	15.00
SK-MW-10	186235.9	145509.2	55.24	55.52	5.00	15.00
SK-MW-11	185100.2	146080.8	49.58	49.77	5.00	15.00
SK-MW-12	184584.6	146773.0	45.92	46.34	4.50	14.50
SK-MW-13	184869.3	144540.8	42.85	43.15	2.60	12.60
SK-MW-14I	184985.2	145793.7	46.85		10.00	15.00

Table 1 **Monitoring Well Construction Data Summary** Airport and Klondike Areas, Pratt & Whitney, East hartford, Connecticut Reference Top of Casing Depth to Top of Depth to Bottom Location Northing Elevation Elevation of Screen **Easting** Screen Identifier (Feet) (Feet) (Feet) (Feet) SK-MW-15I 185236.6 146418.8 49,35 10.00 15.00 SK-MW-16 184352.9 146630.4 45.28 4.50 9.50 SK-MW-19 48.99 3.50 13.50 184607.1 146126.0 SK-MW-20 184672.7 145738.3 50.05 4.00 14.00 SK-MW-21 184710.1 145509.0 47.86 3.50 13.50 SK-MW-22 184748.8 145265.4 47.44 3,00 13,00 SK-MW-23 46.39 3.00 184573.4 145344.2 13.00 SK-MW-24 184824.5 146376.8 49.15 3.00 13.00

Notes:

All depth measurements are given in feet below ground surface, except as noted.

All elevations are given in feet above mean sea level.

Top of casing elevation indicates the elevation of the cover of the protective casing.

Top of riser elevation indicates the elevation of the measurement reference point on well riser.

Table 2
Water-Level Elevations, March 28, 1990
Airport/Klondike Area, Pratt & Whitney, East Hartford, Connecticut

Location	Screened	Reference	Depth to	Elevation of	Depth to	Elevation of
Identifier	Interval	Elevation	Groundwater	Groundwater	Surface Water	Surface Water
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
NK-MW-01	7-12	55.43	5.35	50.08		
NK-MW-02I	5-10	49.64	5.04	44.60		
NK-MW-03	7-12	50.94	5.87	45.07		
NK-MW-04	7-12	46.11	1.53	44.58		
NK-MW-05	5-10	47.67	7.23	40.44		
SA-MW-01	13-18	42.12	9.99	32.13		
SK-MW-01	8-13	51.22	8.26	42.96		
SK-MW-02I	9-19	51.30	4.39	46.91		
SK-MW-03I	6-16	49.70	3.57	46.13		
SK-MW-04I	5.6-15.6	50.81	4.10	46.71		
SK-MW-05	6-11	47.80	7.75	40.05		
SK-MW-06	7-12	48.43	6.41	42.02		
SK-MW-07I	8-13	52.19	8.67	43.52		
SK-MW-08D	49-59	45.02	9.42	35.60		
SK-MW-08S	7.5-12.5	42.92	5.67	37.25		

Notes:

Shaded regions indicate values that were used to create groundwater contours.

NR means Not Recorded.

Table 3 Water-Level Elevations, November 20, 1991

Airport/klondike Area, Pratt & Whitney, East Hartford, Connecticut

	All por t	Kionuike Area	, Pratt & Whitney			
Location	Screened	Reference	Depth to	Elevation of	Depth to	Elevation of
Identifier	Interval	Elevation	Groundwater	Groundwater	Surface Water	Surface Water
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)_
ET-PZ-01	5-10 ^a	42.30				
NA-MW-01	5.3-15.3	46.09	4.80	41.29		
NA-MW-02	4.8-14.8	43.13	3.70	39.43		
≈ NA-MW-03	4.5-14:5	43.06	T 🛵 🦸 🗸 34.60	38.46	23), 16 , 3	
NA-MW-04	10.3-20.3	42.49	5.95	36.54		
NA-MW-05	2.3-11.3	47.91				
NA-MW-06	2-11	47.48				
NA-MW-07	2.3-11.3	48.34				
NA-PZ-01	5-10ª	42.72				
NA-PZ-02	5-10	43.80				
NA-PZ-03	5-10	43.19				
NA-PZ-04	5-10	41.45				
NA-PZ-05	5-10	41.32				
NA-PZ-06	5-10	40.80	·		-	
NA-PZ-07	5-10	43.67				
NA-PZ-08	5-10	40.74				
NA-PZ-09	5-10	40.48				
NA-PZ-10	5-10	43.35				
NA-PZ-11	5-10	42.19				
NA-PZ-12	5-10 ^a	43.13				
NK-MW-01	7-12	55.43	5.94	49.49		
**NK-MW-02	3 € 7 5-10, 4 · ·	48.40	7 4 3.88	44.52	W - Sred Chi	
NK-MW-03	7-12	50.94	5.88			
NK-MW-04	7-12	46.11	1.60	44.51		
ENKEMIVADE SE	366 551036	46:65	6.44	10.21		
ST NISSAWAIS	3844-1985 N.S.		638			
NKSVW/U7	5 12 5 to a	47.60		37.36		
NK-MW-08	4-11	51.01				
NK-MW-09	4-11	50.76				
NK-MW-10	3.5-10.5	49.80				:
NK-MW-11		46.75				
NK-MW-12	4.5-9.5	46.41				
NK-MW-13	5-15	50.49			9	
NK-MW-14	5-10	49.09				
NK-MW-15	2-12	57.35				
NK-MW-16	3.5-13.5	51.25				
NK-MW-17	4-9	49.57				
NK-MW-18	1.7-10.7	47.31				
NK-MW-19	1.7-10.7	46.38				
NK-PZ-01	NA	46.85				
NK-PZ-02	NA	46.77			1	
NK-SG-01	NA	38.33				
NK-SG-02	NA	38.97				
NK-SG-03	NA	41.45				
NK-SG-04 ^b	NA	46.54				
SA-MW-01	13-18	42.12		32.37		
SA-MW-02I	15-25	37.04				
-SECTION VALUE SECTION	10-20		12.57			
S. S. SVIV.	8 87/5-16/53		11 11 11 11 11 11 11 11 11 11 11 11 11			
SA-MW-05I	13.5-23.5	37.81				
SAUVINORS	300 0015510151614		9.29			
SA-PZ-01	5-10	39.56				
<u> </u>			<u> </u>	L		

Table 3
Water-Level Elevations, November 20, 1991
Airport/klondike Area, Pratt & Whitney, East Hartford, Connecticut

		,		, East Hai tioru, C		
Location	Screened	Reference	Depth to	Elevation of	Depth to	Elevation of
Identifier	Interval	Elevation	Groundwater	Groundwater	Surface Water	Surface Water
	(ft)	(ft)	(ft)	(ft)	<u>(ft)</u>	(ft)
SA-PZ-02	5-10	40.00				
SK-MW-01	8-13	50.45	9.51	40.94		759
SK-MW-02	9-19	50.18	6.76	43.42		
SK-MW-03	6-16	49.70	6.93	42.77		
ৣ≒SK-MW-04	5.6-15.6	50.50	6.71	43.79		***/*** ********
SK-MW-05	6-11	47.19	/ ≱ - \$ 8.30	38.89		
SK-MW-06	, · · . 7-12·		7.25	41.18		
SK-MW-07	8-13 ₹	<i>**</i> 51.06	8.17	42.89		
SK-MW-08D	49-59	45.02	8.32	36.70		
SK-MW-08S	7.5-12.5	42.92	5.73	37.19		
SK-MW-09	5-15	63.67	⋣ 1 ₩ 9.00	54.67		24
SK-MW-10	5-15	55.24	9.83	45.41		
SK-MW-11	ÿ.∱ 5- 15 ∜	49.58	7.88	41.70		
SK-MW-12		45.92	5.90	40.02		
SK-MW-13	2.6-12.6	42.85	6.10	36.75		
SK-MW-14I	10-15	46.85				
SK-MW-15I	10-15	49.35				
SK-MW-16	4.5-9.5	45.28				
SK-MW-19	3.5-13.5	48.99				
SK-MW-20	4-14	50.05				
SK-MW-21	3.5-13.5	47.86				
SK-MW-22	3-13	47.44				
SK-MW-23	3-13	46.39				
SK-MW-24	3-13	49.15				
SK-SG-01	NA	40.59				
SK-SG-02	NA	41.03				
SK-SG-03	NA	40.84				
SK-SG-04	NA	41.01				
SK-SG-05	NA	41.04				
SK-SG-06	NA	39.88				
SK-SG-07	NA	40.83				
SK-SG-08	NA	41.15				
SK-SG-09	NA	42.61				

Notes:

Shaded regions indicate values that were used to create groundwater contours.

NR means Not Recorded.

DNF means did not find.

NA means Not Applicable.

^a denotes assumed screened interval.

^b denotes same location as NK-PZ-02.

Table 4 Water-Level Elevations, September , 1996 Airport/Klondike Area, Pratt & Whitney, East Hartford, Connecticut

Location	Screened	Reference	Depth to	Elevation of	Depth to	Elevation of
Identifier	Interval	Elevation	Groundwater	Groundwater	Surface Water	Surface Water
Idelitifici	(ft)	(ft)	(ft)	(it)	(ft)	(ft)
ET-PZ-01	5-10 ^a	42.30	(11)	(11)	(,	(10)
NA-MW-01	5.3-15.3	46.09				
NA-MW-02	4.8-14.8	43.13			- 	
NA-MW-03	4.5-14.5	43.06			····	
NA-MW-04	10.3-20.3	42.49				
NA-MW-05	2.3-11.3	47.91				
NA-MW-06	2-11	47.48				
NA-MW-07	2.3-11.3	48.34	· · · · · · · · · · · · · · · · · · ·			
NA-PZ-01	5-10 ^a	42.72				
NA-PZ-02	5-10	43.80				
NA-PZ-03	5-10	43.19				
NA-PZ-04	5-10	41.45				
NA-PZ-05	5-10	41.32				
NA-PZ-06	5-10	40.80				
NA-PZ-07	5-10	43.67				
NA-PZ-08	5-10	40.74				
NA-PZ-09	5-10	40.48				
NA-PZ-10	5-10	43.35				
NA-PZ-11	5-10	42.19				
NA-PZ-12	5-10 ^a	43.13		<u>-</u>	· · · · · · · · · · · · · · · · · · ·	
NK3MW-01		±55.43	8.09	47.34		
NK-MW-02	5-10	48.40	4.33	44.07	/ **	
NK-MW-02	7-12	50.94	6.39	44.07		·-··
NK-MW-03	7-12	46.11	2.28	43.83		
NK-MW-04		46.11 50.58	2.28			
NX NW-07		47.60	10.10			
VK W.W.082		\$51.01		42.15		
K-VW-09	4-11 Maria / 11	-051.01 -050.76	3,21			
BYKWWW102M		\$49.80	8.12	41.68		
NK-MW-11	*3.3-10.3	46.75	7.21	39.54	151738633	
	\$ 4.5-9.5	46.73	8.65	37.76		31.
NKSVIW-13 3		* *50.49				STATE OF STREET STATE STATE
NKSMIW-14		49.09				
NKMW-15		-149.09	6.27			
NK-MW-16	3.5-13.5	-51.25	6.57	44.68		
NK-MW-17	4-9	49.57	##2 ² /2 1 0.5 / 1	44.00	44 (CAN AREA)	
NK•MW-18→	1.7-10.7	47.31	4.02	3. 43.29		
NKMW 19.	1.7-10.7	46.38	#: 6. 56	39.82		
NK-PZ-01	1.7-10.7 NA	46.85	₩	37.02	522 C. 431 N. 442 C. 1	
NK-PZ-01	NA NA	46.77				
NK-PZ-02 NK-SG-01	NA NA	38.33		, :		<u> </u>
NK-SG-02	NA NA	38.97				
NK-SG-03	NA NA	41.45			<u> </u>	
NK-SG-04	NA NA	46.54				
SA-MW-01	13-18	42.12	9.52	32.60		
SA-MW-02I	15-18	37.04	9.32	32.00	· · · · · · · · · · · · · · · · · · ·	
SA-MW-021 SA-MW-03	10-20	40.36	10.06	30.30		
SA-MW-03	7.5-17.5	38.13	10.06	27.09		
SA-MW-05I	13.5-23.5	37.81	104 Sept. 104	27.09		
	13.3-23.3 3-14.5-14.5		9.17	28.90		B.C.
		38.07	9.17	48.90		
SA-PZ-01	5-10	39.56				
SA-PZ-02	5-10	40.00				

Table 4
Water-Level Elevations, September , 1996
Airport/Klondike Area, Pratt & Whitney, East Hartford, Connecticut

Location	Screened	Reference	Depth to	Elevation of	Depth to	Elevation of
Identifier	Interval	Elevation	Groundwater	Groundwater	Surface Water	Surface Water
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
SK-MW-01	8-13	50.45	10.12	40.33		PER PROPERTY OF THE PERSON NAMED OF THE PERSON
SK-MW-02	9-19	50.18	7.87	42.31		
SK-MW-03	6-16	49.70	8.25	41.45		Same Entire
*SK-MW-04	5.6-15.6	50.50	7.90	42.60	Y-1-114	and the state of t
SK-MW-05	6-11	47.19	8.58	38.61	4.5	
SK-MW-06	7-12	48.43	8.2 9	40.14	./* *\ .*	1025
SK-MW-07	8-13	51.06	9.42	41.64	i i di	
SK-MW-08D	49-59	45.02				
SK-MW-08S	7.5-12.5	42.92	6.02	36.90		_
SK-MW-09	5-15 5-15 €	63.67	9.58	54.09	· Ariana	
***SK-MW-10	*** 5-15	55.24	10.38	44.86		
*SK-MWAIT	5-15	49.58	8.78	40.80	(50)	
SK-MW-12	4.5-14.5	45.92	6.62	39.30	14 / 14 / 20	
4 SK-MW-134	2.6-12.6	42.85	6.36	36.49	T. W. A.	Market Strade
SK-MW-14I	10-15	46.85	,			
SK-MW-15I	10-15	49.35				
SK-MW-16	₹ 4.5-9.5	45.28	7.15	38.13	e i i i i i	A STATE OF THE SECOND
	3.5-13.5	48.99	10 .19	38.80	. 23 4 ii	
145K-MW-20.51	4-14	50.05	12.02	38.03		
		47.86	10 .75	37.11		
SKEMW22##	数据 3-13 排	- 47.44	0.73	37.02		
SERVIVE DESCRIPTION	3-13	46.39	3.4 9. 69	36.70	44.0	
SKSMW924	3-13	赛 49.15	9.12	40.03	-8343	
SK-PZ-01	NA	40.59				
SK-PZ-02	NA	41.03				
SK-PZ-03	NA	40.84				
SK-SG-04	NA	41.01				
SK-SG-05	NA	41.04				
SK-SG-06	NA	39.88				
SK-SG-07	NA	40.83				
SK-SG-08	NA	41.15				
SK-SG-09	NA	42.61				

Notes:

Shaded regions indicate values that were used to create groundwater contours.

NR means Not Recorded.

DNF means did not find. NA means Not Applicable.

^a denotes assumed screened interval.

^b denotes same location as NK-PZ-02.

Table 5 Water-Level Elevations, June 2, 1997

Airport/Klondike Area, Pratt & Whitney, East Hartford, Connecticut

	,		, I ratt & Winthey			
Location	Screened	Reference	Depth to	Elevation of	Depth to	Elevation of
Identifier	Interval	Elevation	Groundwater	Groundwater	Surface Water	Surface Water
	(ft)	(ft)	(ft)	(11)	(ft)	(ft)
ET-PZ-01	5-10 ^a	42.30	2.82	39.48		
NA-MW-01	5.3-15.3	46.09	4.80	41.29		
NA-MW-02	4.8-14.8	43.13	3.75	39.38		
NA-MW-03	4.5-14.5	43.06	4.23	38.83		
NA-MW-04	10.3-20.3	42.49	5.30	37.19		
NA-MW-05	2.3-11.3	47.91	1.7 7	40.14		Market State
NA-MW-06	2-11	47.48	7.44	40.04	1/44	100 100
NA-MW-07	2.3-11.3	48.34	8.32	40.02		At the same of
NA-PZ-01	5-10 ^a	42.72	NR			
** NA-PZ-02	5-10	43.80	5.79	38.01	B Herita	7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 -
NA-PZ-03	5-10	43.19	4.39	38.80		
NA-PZ-04	5-10	41.45	3.40	38.05		
NA-PZ-05	5-10	41.32	NR			
NA-PZ-06	5-10	40.80	NR			
NA-PZ-07	5-10	43.67	4.89	38.78		· · · · · · · · · · · · · · · · · · ·
NA-PZ-08	5-10	40.74	5.49	35.25		
NA-PZ-09	5-10	40.48	NR	55.25	THE PARTY OF THE P	
NA-PZ-10	5-10	43.35	NR			
NA-PZ-11	5-10	42.19	NR			
NA-PZ-12	5-10 ^a	43.13	NR			
NK-MW-01	.7-12	** * 55.43	8.50	46.93		
NK-MW-02	5-10	48.40	3.92	44.48	1488	
NK-MW-03	7-12	50.94	5.77	45.17		
NK-MW-04	7-12	46.11	1.71	44.40		· · · · · · · · · · · · · · · · · · ·
NK-MW-04		± ± 50.58	6.63	43.95		
		4.5 \$47.60	9.32	38.28		
NKSMW-08		× 51.01	8.63	42.38		
NKGMW 09 d		150.76	8.51	42.25		
NK-MW-10	3.5210.5	49.80	7.9 0	41.90	The second secon	
NK-MW-11	J.3510.36	46.75	6.19	40.56		
NK-MW-12	* 4:5-9.5 *	40.73 #46.41	3.19 3.802	38.39		
NK-MW-13		*50.49	11.44	39.05		
*NK-MW-14		49.09	8.51	40.58		English Committee of the Committee of th
NK-MW-15	2-12:-	\$57.35	4.38	52.97		
*NK-MW-16	3.5-13:5	\$ 51.25	5.95	45.30		
NK-MW-17	429	49.57	7.05	42.52		
*NK-MW-18		47.31	2.45	44.86		
**************************************	1.7-10.7	ž 46.38	5.99	40.39		
NK-PZ-01	NA	46.85	NR	40.57		
NK-PZ-02	NA NA	46.77	NR			
NK-SG-01	NA NA	38.33	NA NA		0.18	38.15
NK-SG-02	NA NA	38.97	NA		0.57	
NK-SG-03	NA NA	41.45	NA		1.25	
NK-SG-04	NA NA	46.54	NA NA		1.85	
SA-MW-01	13-18	42.12	8.28	33.84	1.63	44.03
SA-MW-021	15-25	37.04	10.75	26.29		
SA-MW-03	10-20	40.36	8.75	31.61		
SA-MW-04	7.5-17.5	38.13	10.41	27.72		
SA-MW-04 SA-MW-05I	13.5-23.5	37.81	8.52	29.29		
SA-MW-05S	4.5-14.5	38.07	8.45	29.62		
SA-PZ-01	5-10	39.56	5.59	33.97		
SA-PZ-UI	J-10	L	3.39	33.97	<u> </u>	<u> </u>

Table 5
Water-Level Elevations, June 2, 1997
Airport/Klondike Area, Pratt & Whitney, East Hartford, Connecticut

Location	Screened	Reference	Depth to	Elevation of	Depth to	Elevation of
Identifier	Interval	Elevation	Groundwater	Groundwater	Surface Water	Surface Water
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
SA-PZ-02	5-10	40.00				
SK-MW-01	8-13	50.45	7.90	42.55		
SK-MW-02	9-19	50.18	3.70	46.48		
SK-MW-03	6-16	49.70	4.05	45.65		
SK-MW-04	5.6-15.6	50.50	4.85	45.65		
SK-MW-05	6-11	47.19	7.10	40.09		
SK-MW-06	7-12	48.43	6.65	41.78		
SK-MW-07	8-13	51.06	7.58	43.48		
SK-MW-08D	49-59	45.02	8.37	36.65		
SK-MW-08S	7.5-12.5	42.92	5.60	37.32		
SK-MW-09	5-15	63.67	6 .56	57.11		
SK-MW-10	5-15	55.24	9.07	46.17		
SK-MW-11	5-15	49.58	5.74	43.84		
SK-MW-12	4.5-14.5	45.92	5 .35	40.57		
SK-MW-13	2.6-12.6	42.85	5.60	37.25		
SK-MW-14I	10-15	46.85	4.90	41.95		
SK-MW-15I	10-15	49.35	4.72	44.63		
SK-MW-16	4.5-9.5	45.28	6.80	38.48		
SK-MW-19	3.5-13.5	48.99	9.05	39.94		
SK-MW-20	4-14	50.05	11.02	39.03		
SK-MW-21	3.5-13.5	47.86	9.60	38.26		
SK-MW-22	3-13	47.44	9.37	38.07		
SK-MW-23	3-13	46.39	9.20	37.19		
SK-MW-24	3-13	49.15	7 .25	41.90		
SK-PZ-01	NA	40.59	3.41	37.18	3.66	36.93
SK-PZ-02	NA	41.03	4.28	36.75	4.51	36.52
SK-PZ-03	NA	40.84	4.01	36.83	4.48	36.36
SK-SG-04	NA	41.01			4.93	36.08
SK-SG-05	NA	41.04			4.06	36.98
SK-SG-06	NA	39.88			1.37	38.51
SK-SG-07	NA	40.83			2.48	38.35
SK-SG-08	NA	41.15			2.81	38.34
SK-SG-09	NA	42.61			4.32	38.29

Notes:

Shaded regions indicate values that were used to create groundwater contours.

NR means Not Recorded.

DNF means did not find.

NA means Not Applicable.

^a denotes assumed screened interval.

^b denotes same location as NK-PZ-02.

Table 6
Water-Level Elevations, November 17, 1997
Airport/Klondike Area, Pratt & Whitney, East Hartford, Connecticut

	Airportii	Tionaire Area	, Pratt & Whitney	, Last Hartiola,	Johnecheut	
Location	Screened	Reference	Depth to	Elevation of	Depth to	Elevation of
Identifier	Interval	Elevation	Groundwater	Groundwater	Surface Water	Surface Water
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
ET-PZ-01	5-10°	42.30	2.62	39.68		
NA-MW-01	5.3-15.3	46.09	4.93	41.16		
NA-MW-02	4.8-14.8	43.13	3.37	39.76		-
*NA-MW-03	4.5-14.5	≯43.06	4.62	38.44	42.74	
NA-MW-04	10.3-20.3	42.49	6.05	36.44		
*NA=MW-05	2.3-11.3	47.9 1	8.05	39.86	2 23 4	
NA-MW-06	2-11	47.48	no without Divino	39.83		3 1 3 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
NA-MW-07	2.3-11.3	48.34	8.40	39.94		772.25.2
NA-PZ-01	5-10 ^a	42.72	3.01	39.71		
NA-PZ-02	5-10		* 5:58	38.22	4 75. 14.14	
NA-PZ-03	5-10	43.19	4.89	38.30		
NA-PZ-04	5-10	41.45	 _ _ _ _ _ _ _ _ _ _ _ _ _ 	38.17		
NA-PZ-05	5-10	41.32	DNF	30.17	-	
NA-PZ-06	5-10	40.80		36.05		-
NA-PZ-00				38.31		MARCH 12
NA PZ-08	5-10 5-10	43.67	Acceptance of the base of the control of the contro	34.99	7	
		40.74 40.48			Mill distributed by	
NA PZ-09	5-10	12.100		34.78		
NA-PZ-10	5-10	43.35	4.72	38.63	-	
NA-PZ-11	5-10	42.19	3.88	38.31		· · ·
NA-PZ-12	5-10 ^a	43.13	4.80	38.33		
NK-MW-01	7-12	55.43	6.34	49.09		
NK-MW-02	5-10	48.40	4.02	44.38		
NK-MW-03	7-12	50.94	5.73	45.21		
NK-MW-04	7-12	46.11	1.60	44.51		
TOTAL STATE OF THE	4-11.5	50,58	7.24	43.34		
SERVICE OF ES	🥦 5- 12 .5	4 14 7/60	9.97	37.63		
SERVICE VANCE OF THE SERVICE OF THE	4-11	ž 31 51.01	8153	42.48		
KSMW209	** 4-11	5076	8.40	42.36	# 97747	
\$\$\$1K\$\$XIVE10\$\$	3.5-10.5	49:80	7.78	¥ 42.02	1946	SIE
NK-MW-11		46.75	6.92	39.83		
WNK-12%	4.5-9.5	₹,46.41	8.54	37.87	# A	
NK-MW-13	5-15	50. 49	12.01	38.48		
NK-MW-14	5-10	49.09	8.40	40.69	* **** ***	and description of the first
MANKSMW-15	2-12	57:85	7.21	50.14		1.75 AFF 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
NK-MW-16	3.5-13.5	51.25	5.94	45.31	· Kike	Arthuri :
NK-MW-17	4-9	49.57	7.9 2	41.65	2/42	SKIED .
MINK MW-18	1.7-10.7	47.31	2.4 5	44.86	CANAGE	70.00
NK-MW-19	1.7-10.7	46.38	6 .69	\$ 39.69	; ***** ***	
NK-PZ-01	NA	46.85	2.13	44.72	2.10	44.75
NK-PZ-02	NA	46.77	2.06	44.71		44.66
NK-SG-01	NA	38.33			1.03	37.30
NK-SG-02	NA	38.97			1.57	37.40
NK-SG-03	NA	41.45			1.26	40.19
NK-SG-04 ^b	NA	46.54			1.88	44.66
SA-MW-01	13-18	42.12	9.16	32.96		
SA-MW-02I	15-25	37.04		26.70	 	
SA-MW-03	10-20	40.36	9.09	31.27	 	
##SA-MW-04	7.5-17.5	38713		27.48	†	
SA-MW-05I	13.5-23.5	37.81	8.19	29.62	× QUESTION IN THE	
SANW 05S	4.5-14.5	37.81	8.19	29.93		
	5-10	39.56			A 1.4-10, 50-11.11	Company (1)
SA-PZ-01			5.46	34.10		
SA-PZ-02	5-10	40.00	5.71	34.29	<u> </u>	

Table 6
Water-Level Elevations, November 17, 1997
Airport/Klondike Area, Pratt & Whitney, East Hartford, Connecticut

Location	Screened	Reference	Depth to	Elevation of	Depth to	Elevation of
Identifier	Interval	Elevation	Groundwater	Groundwater	Surface Water	Surface Water
	(ft)	(ft)	(ft)	(fi)	<u>(ft)</u>	(ft)
:: *SK-MW-01	8-13	50.45	10.65	39.80	12 T 4 12 T	
SK-MW-02	9-19	50.18	8.48	41.70		
∴&SK-MW-03	6-16	49.7 0	8.64	41.06	J. J. J. J. J. J. J. J. J. J. J. J. J. J	
SK-MW-04	5.6-15.6	\$50.5 0	8.19	42.31		JAK-SAYL"
SK-MW-05	6-11	47.19		38.78		7516
SK-MW-06	7-12	48.4 3		40.34	764	in the same of
SK-MW-07	8-13	i-51.06		42.04		Y Park
SK-MW-08D	49-59	45.02	8.29	36.73		
SK-MW-08S	7.5-12.5	42.92	5.41	37.51		
SKEMW-09	5-15			53.30		
SKSMW-10	5-15	155.24	10 .27	44.97	120 A. Land	
#35K-MW-11	5-15	. 49:58	8.50	41.08		7.77
SK-MW-12	§ 4.5-14.5	45.9 2	6.29	39.63	1. 44	7111
SKEMIW-13 FF	2.6-12.6	, 42.8 5	5.88	36.97		
& SKSVIW-141	10-15	46:8 5	7.03	39.82	*	
SSK-MW-15I	10-15	-49.3 5	7.54	41.81		At The Land
SK4MW-16	4.5-9.5	45:28	6.78	38.50	#LA	
SK-MW-19	3.5-13.5	*48.9 9	9.88	39.11	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	
SK-MW-20	4-14	50.0 5	11.88	38.17		
SKEMIW-21	· 3.5-13.5	47.86	10.79	37.07	4 3.50	
SKEMW-22	3-13	47/44	10.16	37.28	11. C	E-# 3
SK NOW-23	3-13	46,89	3 3 9.20	37.19	WASTER	
MW-24	3-13	• 💖 497 15	8.78	40.37	71.560	
SK-SG-01	NA	40.59	3.49	37.10	3.68	36.91
SK-SG-02	NA	41.03	4.25	36.78	4.48	36.55
SK-SG-03	NA	40.84	4.25	36.59	4.44	36.40
SK-SG-04	NA	41.01			4.88	36.13
SK-SG-05	NA	41.04			4.11	36.93
SK-SG-06	NA	39.88			1.48	38.40
SK-SG-07	NA	40.83			2.76	38.07
SK-SG-08	NA	41.15			3.35	37.80
SK-SG-09	NA	42.61			5.35	37.26

Notes:

Shaded regions indicate values that were used to create groundwater contours.

NR means Not Recorded.

DNF means did not find.

NA means Not Applicable.

^a denotes assumed screened interval.

^b denotes same location as NK-PZ-02.

Table 7
Water-Level Elevations, April 22, 1998
Airport/Klondike Area, Pratt & Whitney, East Hartford, Connecticut

	Airport/	Kiondike Area	, Pratt & Wnitney	r, East Hartford, C	onnecticut	
Location	Screened	Reference	Depth to	Elevation of	Depth to	Elevation of
Identifier	Interval	Elevation	Groundwater	Groundwater	Surface Water	Surface Water
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
ET-PZ-01	5-10 ^a	42.30	1.90	40.40		
NA-MW-01	5.3-15.3	46.09	5.24	40.85		
NA-MW-02	4.8-14.8	43.13	3.20	39.93		
NA-MW-03	4.5-14.5	43.06	3.45	39.61		
NA-MW-04	10.3-20.3	42.49	4.83	37.66		
NA•MW-05	2.3-11.3	47.91	7.26	40.65		· * * * * * * * * * * * * * * * * * * *
NA-MW-06	2-11	2 47.48	6.90	40.58		
NASMW-07	* 2.3-11.3	48.34	*** § 7.63	40.71		""一个时间
NA-PZ-01	5-10 ^a	42.72	2.77	39.95		
NA-PZ-02	5-10	43.80	5.53	38.27		· · · · · · · · · · · · · · · · · · ·
NA-PZ-03	5-10	43.19	3.67	39.52		
NA-PZ-04	5-10	41.45	2.93	38.52		
NA-PZ-05	5-10	41.32	2.71	38.61		
NA-PZ-06	5-10	40.80	4.39	36.41		
NA-PZ-07	5-10	43.67	4.00	39.67		
NA-PZ-08	5-10	40.74	4.90	35.84	***************************************	
NA-PZ-09	5-10	40.48	4.73	35.75		
NA-PZ-10	5-10	43.35	4.75	38.60		
NA-PZ-11	5-10	42.19	3.17	39.02	· · · · · · · · · · · · · · · · · · ·	
NA-PZ-12	5-10 ^a	43.13	3.47	39.66		
NK-MW-01	7-12	55.43	3.37	52.06	· · · · · · · · · · · · · · · · · · ·	
NK-MW-02	5-10	48.40	3.64	44.76		
NK-MW-03	7-12	50.94	5.61	45.33		
NK-MW-04	7-12	46.11	1.25	44.86		
NW-06		\$ 50,58	6.20	44.38	1512 (16 14)	Landar Continue Landar Sance
NEWW-07			9,65	第二 37.95	A. J. S.	
NK-WW-08€		\$ 51.01	8.54	42.47		and salari
ЯК•М/₩-09; 💥				42.39	3,17	
NEWW-10%	3.5-10.5		7.73	42.07		
NK-MW-11	34	46.75	5.97	40.78	All practices	
NK-MW-12 💢		46.41	£ 8.14	38.27	1 P	
NK•MW-13 **↑	5-15		34 11.44	39.05		
NKGMW-14	3 5-10	選 49.09	2 3 3 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			CONTRACTOR OF THE PARTY OF THE
			8.42	40.67		Later Market
	2-12	\$ 57.35	5.27	52.08	Augus s	
	3.5-13.5	57.35 51.25	5.27 8.82	52.08 42.43		
NK-MW-17	3.5-13.5 4-9	57.35 51.25 49.57	5.27 8.82 6.56	52.08 42.43 43.01		
NK:MW-17 /> NK:MW-18 //	3.5-13.5 4-9 1.7-10.7	57:35 51:25 49:57 47:31	\$ 5.27 8.82 6.56 2.15	52.08 42.43 43.01 45.16		
NK-MW-17 AM NK-MW-18 AM NK-MW-19 AM	3.5-13.5 4-9 1.7-10.7 1.7-10.7	57:35 51:25 49:57 47:31 46:38	5.27 8.82 6.56 2.15 5.85	52.08 42.43 43.01 45.16 40.53		
NK-MW-17 NK-MW-18 NK-MW-19 NK-PZ-01	3.5-13.5 4-9 1.7-10.7 1.7-10.7 NA	57:35 51:25 49:57 47:31 46:38 46:85	5.27 8.82 6.56 2.15 5.85 1.95	52.08 42.43 43.01 45.16 40.53 44.90		
NK-PZ-02	3.5-13.5 4-9 1.7-10.7 NA NA	57:35 51:25 49:57 47:31 46:38 46.85 46.77	5.27 8.82 6.56 2.15 5.85	52.08 42.43 43.01 45.16 40.53		
NK-MW-17 NK-MW-18 NK-PZ-01 NK-PZ-02 NK-SG-01	3.5-13.5 4-9 1.7-10.7 NA NA NA	57:35 51:25 49:57 47:31 46:38 46:85 46:77 38:33	5.27 8.82 6.56 2.15 5.85 1.95	52.08 42.43 43.01 45.16 40.53 44.90	0.60	37.73
NK-MW-17 NK-MW-19 NK-PZ-01 NK-PZ-02 NK-SG-01 NK-SG-02	3.5-13.5 4-9 1.7-10.7 NA NA NA NA	57:35 51:25 49:57 47:31 46:38 46:85 46:77 38:33 38.97	5.27 8.82 6.56 2.15 5.85 1.95	52.08 42.43 43.01 45.16 40.53 44.90	0.60 1.12	37.73 37.85
NK-MW-17 NK-MW-18 NK-PZ-01 NK-PZ-02 NK-SG-01 NK-SG-02 NK-SG-03	3.5-13.5 4-9 1.7-10.7 NA NA NA NA NA	57.35 51.25 49.57 47.31 46.38 46.85 46.77 38.33 38.97 41.45	5.27 8.82 6.56 2.15 5.85 1.95	52.08 42.43 43.01 45.16 40.53 44.90	0.60	37.73
NK-MW-17 NK-MW-18 NK-PZ-01 NK-PZ-02 NK-SG-01 NK-SG-02 NK-SG-03 NK-SG-04 ^b	3.5-13.5 4-9 1.7-10.7 NA NA NA NA NA	57:35 49:57 47:31 46:38 46:85 46.77 38:33 38.97 41.45 46.54	5.27 8.82 6.56 2.15 5.85 1.95 2.03	52.08 42.43 43.01 45.16 40.53 44.90 44.74	0.60 1.12	37.73 37.85
NK-MW-17 NK-MW-18 NK-PZ-01 NK-PZ-02 NK-SG-01 NK-SG-02 NK-SG-03 NK-SG-04 ^b SA-MW-01	3.5-13.5 4-9 1.7-10.7 NA NA NA NA NA NA NA NA NA	57:35 51:25 49:57 47:31 46:38 46:85 46:77 38:33 38:97 41:45 46:54 42:12	5.27 8.82 6.56 2.15 5.85 1.95 2.03	52.08 42.43 43.01 45.16 40.53 44.90 44.74	0.60 1.12	37.73 37.85
NK-MW-17 NK-MW-18 NK-PZ-01 NK-PZ-02 NK-SG-01 NK-SG-02 NK-SG-03 NK-SG-04 ^b SA-MW-01 SA-MW-01	3.5-13.5 4-9 1.7-10.7 NA NA NA NA NA NA 13-18 15-25	57:35 49:57 47:31 46:38 46:85 46:77 38:33 38:97 41:45 46:54 42:12 37:04	5.27 8.82 6.56 2.15 5.85 1.95 2.03 7.94 10.33	52.08 42.43 43.01 45.16 40.53 44.90 44.74 34.18 26.71	0.60 1.12	37.73 37.85
NK-MW-17 NK-MW-18 NK-PZ-01 NK-PZ-02 NK-SG-01 NK-SG-02 NK-SG-03 NK-SG-03 NK-SG-04 ^b SA-MW-01 SA-MW-01 SA-MW-03	3.5-13.5 4-9 1.7-10.7 NA NA NA NA NA 13-18 15-25 10-20	57:35 49:57 47:31 46:38 46:85 46:77 38:33 38:97 41:45 46:54 42:12 37:04 40:36	5.27 8.82 6.56 2.15 5.85 1.95 2.03 7.94 10.33 8.97	52.08 42.43 43.01 45.16 40.53 44.90 44.74 34.18 26.71 31.39	0.60 1.12 1.26	37.73 37.85 40.19
NK-MW-17 NK-MW-18 NK-PZ-01 NK-PZ-02 NK-SG-01 NK-SG-02 NK-SG-03 NK-SG-04 SA-MW-01 SA-MW-01 SA-MW-03 SA-MW-04	3.5-13.5 4-9 1.7-10.7 NA NA NA NA NA 13-18 15-25 10-20	57.35 49.57 47.31 46.38 46.85 46.77 38.33 38.97 41.45 46.54 42.12 37.04 40.36	5.27 8.82 6.56 2.15 5.85 1.95 2.03 7.94 10.33 8.97 2.9.95	34.18 26.71 31.39 22.43 42.43 43.01 45.16 40.53 44.90 44.74	0.60 1.12	37.73 37.85
NK-MW-17 NK-MW-18 NK-PZ-01 NK-PZ-02 NK-SG-01 NK-SG-02 NK-SG-03 NK-SG-03 NK-SG-04 ^b SA-MW-01 SA-MW-01 SA-MW-01 SA-MW-03 SA-MW-04 SA-MW-05I	3.5-13.5 4-9 1.7-10.7 NA NA NA NA NA 13-18 15-25 10-20 7.5-17.5 13.5-23.5	57.35 49.57 47.31 46.38 46.85 46.77 38.33 38.97 41.45 46.54 42.12 37.04 40.36 38.13 37.81	7.94 10.33 8.97 7.61	34.18 26.71 31.39 22.08 42.43 43.01 45.16 40.53 44.90 44.74	0.60 1.12 1.26	37,73 37,85 40,19
NK-MW-17 NK-MW-18 NK-PZ-01 NK-PZ-02 NK-SG-01 NK-SG-02 NK-SG-03 NK-SG-04 ^b SA-MW-01 SA-MW-01 SA-MW-01 SA-MW-05I SA-MW-05S	3.5-13.5 4-9 1.7-10.7 NA NA NA NA NA 13-18 15-25 10-20 7.5-17.5 13.5-23.5 4.5-14.5	57:35 49:57 47:31 46:38 46:85 46:77 38:33 38:97 41:45 46:54 42:12 37:04 40:36 38:13 37:81	5.27 8.82 6.56 2.15 5.85 1.95 2.03 7.94 10.33 8.97 9.95 7.61	34.18 26.71 31.39 28.18 30.20 30.81	0.60 1.12 1.26	37.73 37.85 40.19
NK-MW-17 NK-MW-18 NK-PZ-01 NK-PZ-02 NK-SG-01 NK-SG-02 NK-SG-03 NK-SG-03 NK-SG-04 ^b SA-MW-01 SA-MW-01 SA-MW-01 SA-MW-03 SA-MW-04 SA-MW-05I	3.5-13.5 4-9 1.7-10.7 NA NA NA NA NA 13-18 15-25 10-20 7.5-17.5 13.5-23.5	57.35 49.57 47.31 46.38 46.85 46.77 38.33 38.97 41.45 46.54 42.12 37.04 40.36 38.13 37.81	7.94 10.33 8.97 7.61	34.18 26.71 31.39 22.08 42.43 43.01 45.16 40.53 44.90 44.74	0.60 1.12 1.26	37,73 37,85 40,19

Table 7
Water-Level Elevations, April 22, 1998
Airport/Klondike Area, Pratt & Whitney, East Hartford, Connecticut

Location	Screened	Reference	Depth to	Elevation of	Depth to	Elevation of
Identifier	Interval	Elevation	Groundwater	Groundwater	Surface Water	Surface Water
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
SK-MW-01	8-13	50.45	6.95	43.50		
SK-MW-02	9-19	50.18	2.55	47.63		
SK-MW-03	6-16	49.70	2.70	47.00		
SK-MW-04	5.6-15.6	50.50	3.25	47.25		
SK-MW-05	6-11	47.19	6.08	41.11		
SK-MW-06	7-12	48.43	5.89	42.54		
SK-MW-07	8-13	51.06	7.12	43.94		
SK-MW-08D	49-59	45.02	8.09	36.93		
SK-MW-08S	7.5-12.5	42.92	4.77	38.15		
🎎 SK-MW-09 😁	5-15	63.67	5.60	58.07	1. 建铁铁	
SK-MW-10	5-15	55.24	8.53	46.71	10 TH 1 TH 1 TH 1 TH 1 TH 1 TH 1 TH 1 TH	
SK-MW-11	5-15	49.58	4.28	45.30		
SK-MW-12	4.5-14.5	45.92	4.89	41.03	-	
SK-MW-13	2.6-12.6	42.85	4.41	38.44		
SK-MW-14I	10-15	46.85	. NA			
SK-MW-15I	10-15	49.35	3.67	45.68		
SK-MW-16	4.5-9.5	45.28	6.55	38.73	i. Pili	1962 critis
SK-MW-19	3.5-13.5	48.99	8.18	40.81	1.52	
SK-MW-20	4-14	50.05	10.15	39.90		
SK-MW-21	3.5-13.5	47.86	* 8.49	39.37	2 7	
SK-MW-22	3-13	47,44	8.12	39.32	36.	
等 SK:MW-23 第4	3-13	46:39	7.97	38.42	MONTH	100000000000000000000000000000000000000
SK-MW-24	3-13	49.15	** 6.31	42.84		
SK-SG-01	NA	40.59	3.00	37.59		
SK-SG-02	NA	41.03	3.38	37.65		
SK-SG-03	NA	40.84	2.90	37.94		
SK-SG-04	NA	41.01			4.32	36.69
SK-SG-05	NA	41.04			3.63	37.41
SK-SG-06	NA	39.88			1.56	38.32
SK-SG-07	NA	40.83			2.60	38.23
SK-SG-08	NA	41.15			3.35	37.80
SK-SG-09	NA	42.61			4.86	37.75

Notes:

Shaded regions indicate values that were used to create groundwater contours.

NR means Not Recorded.

DNF means did not find.

NA means Not Applicable.

^a denotes assumed screened interval.

^b denotes same location as NK-PZ-02.

DRAWINGS

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Facility Name: PRATT & WHITNEY (MAIN STREET)						
Phase Classification: <u>R-9</u>						
Document Title: <u>DRAFT</u> , <u>UNIT-SPECIFIC TECHNICAL</u> <u>MEMORANDA</u> , <u>SUMMARY SITE INVESTIGATION AND</u> <u>REMEDIATION REPORT</u> , <u>AIRPORT/KLONDIKE AREA</u> , <u>VOLUME 7 [PART 4 OF 4]</u>						
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